

सत्यमेव जयते

RESEARCH PROFILE & FACILITIES

National Institute of Technology Raipur (2026)

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Research
Profile & Facilities

National Institute of Technology Raipur
(Year 2026)

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From The Chairman's Desk



It is my pleasure to introduce our well-qualified faculty members in various disciplines of engineering and science as well as the infrastructural facilities at the National Institute of Technology Raipur. The Institute has successfully forged research collaborations with most of the esteemed Research Organizations, Research funding agencies at national and state levels. Our Institute has established collaborative relationships with leading Industries across diverse sectors including engineering, bio-technology, medical and many more. These partnerships enable our researchers to engage in mutually beneficial projects that leverage industry expertise and resources.

Through these collaborations, our researchers have the opportunity to work on cutting-edge projects that address industry-specific challenges. The transfer of knowledge, technology, and experiences between our Institute and our industry partners fosters a dynamic environment for innovation and impactful research outcomes. Our Institute is committed to nurturing these partnerships, as they not only enrich the research experience for our faculty members and research scholars but also contribute to the advancement of industry practices. We are proud of our laboratories equipped with the latest technology, allowing researchers to conduct cutting edge experiments and analyses.

I'm sure that this Institute Research Profile brochure shall go a long way in fostering synergistic relationships which we have developed with our industry partners, Research Organizations and look forward to furthering our collaborative efforts in pursuit of ground-breaking research and technological advancements.

I congratulate the Research & Consultancy Team of the Institute for placing such an important and informative dossier.

Dr. Suresh Haware
Chairman, Board of Governors
National Institute of Technology Raipur

From The Director's Desk



I am delighted to share with you the state-of-the-art research facilities and resources available to our faculty and scholars. Our institute is committed to providing ample resources for scholarly pursuits, including comprehensive access to research databases, scholarly journals, and specialized software. We take pride in supporting our researchers with the state-of-the-art infrastructure and resources to pursue their ambitious research endeavors. It is our firm belief that these resources, coupled with our supportive research environment, empower our faculty and scholars to achieve ground-breaking results and make meaningful contributions to their respective fields. These facilities can be accessed by researchers of other academic Institutions, research laboratories and Industries as well.

Our institute is dedicated to fostering a culture of innovation and discovery, and our researchers are at the forefront of cutting-edge advancements in engineering, science and technology. Through their dedication and expertise, they are making significant contributions to their respective fields and shaping the future of our society. From developing new technologies to addressing pressing societal challenges, our researchers are tackling complex problems and pushing the boundaries of knowledge.

In this research profile brochure, you will have the opportunity to learn about the diverse range of research interests and facilities available at NIT Raipur. I invite you to explore the breadth and depth of our research activities and discover the impact that our institute is making in the research front. I invite you to join us for collaborative research, testing and consultancy works.

Prof. N. V. Ramana Rao
Director
National Institute of Technology Raipur

From The Dean R&C's Desk



It is my pleasure to present the Institute Research Profile brochure of National Institute of Technology Raipur. With the active support of all Head of the Departments, attempt has been made to present the Departmental profiles highlighting the area of expertise of our faculty members and the major research facilities available. I hope that this information will be useful to know about various research works, externally funded research projects, as well as the consultancy works ongoing at our Institute. The contact details of the Head of the Departments and various laboratory-in-charges have also been shared. We are thankful for your interest in the research work at our Institution and look forward for your active collaborations in our ongoing research, testing and consultancy work.

Prof. Guru Prasad Subas Chandra Mishra
Dean (Research and Consultancy)
National Institute of Technology Raipur

Content

S.No.	Name of the Department / Centre	Page No.
	About NIT Raipur	i-iv
	Top 2% World Scientists of NIT Raipur	v-vii
	Research Details of the Institute	viii
	Office of the Dean (R&C)	ix
1.	Applied Geology	1-9
2.	Architecture and Planning	10-15
3.	Bio-Medical Engineering	16-28
4.	Biotechnology	29-36
5.	Chemical Engineering	37-44
6.	Chemistry	45-50
7.	Civil Engineering	51-60
8.	Computer Applications	61-64
9.	Computer Science & Engineering	65-72
10.	Electrical Engineering	73-84
11.	Electronics and Communication Engineering	85-91
12.	Humanities and Social Sciences	92-98
13.	Information Technology	99-106
14.	Mechanical Engineering	107-116
15.	Metallurgical and Materials Engineering	117-126
16.	Mining Engineering	127-142
17.	Mathematics	143-148
18.	Physics	149-152
19.	Workshop	153-157
20.	Central Computer Center	158-167
21.	Central Library	168-169

About NIT Raipur

The institute is committed to the challenging task of development of technical education by preparing seasoned graduates in highly sophisticated fields of engineering and technology. The development of India as an emerging industrial power is a demanding exercise as it involves the combination of cost-effectiveness and efficiency along with producing world-class technology at the cutting edge. For about five decades we have been doing it with sincerity and commitment at NIT Raipur. At present the institute offers graduate level courses in twelve disciplines.

- Applied Geology
- Architecture
- Bio-Medical Engineering
- Bio-Technology
- Chemical Engineering
- Civil Engineering
- Computer Science & Engineering
- Department of Chemistry
- Department of Mathematics
- Department of Physics
- Department of Humanities & Social Sciences
- Electrical Engineering
- Electronics & Telecom. Engineering
- Information Technology
- Master In Computer Application
- Mechanical Engineering
- Mining Engineering
- Metallurgy Engineering
- Workshop



The Institute, located in Raipur, the Capital City of Chhattisgarh State, is spared over an area of 100 acres. Raipur city is well connected with Mumbai, Delhi, Chennai, Visakhapatnam, Nagpur & Bhubneshwar by regular flights and is on the main Howrah-Mumbai railway line route. The institute is 5 km from Raipur railway station and 14 km from the airport on NH-6, the Great Eastern Road. The state of Chhattisgarh is a mineral-rich state having enormous potential for development with seemingly inexhaustible natural resources of coal, iron ore, limestones, dolomite, tin, gemstones, and other minerals. Many industries, such as those of cement, steel, steel alloy, mines, etc. are located in the vicinity of the institute giving it a unique advantage for industry-institute interaction in various disciplines of engineering.

Starting with two branches in 1956 the institute has grown in tandem with the major surrounding industries - the Bhilai Steel Plant, SECL, BALCO and NTPC, Korba - and presently offers 12 undergraduate, 11 Postgraduate (including M.C.A and M.Tech. in Applied Geology) and 18 Ph.D programs. The institute offers facilities for Ph.D. and also undertakes R & D activities, provides testing, consultancy, and other extension services including continuing education to the industry through the Industry Institute Interaction cell and the placement of the student through the Department of Training & Placement. The students have brought laurels to the institute and are very well-placed in Government organizations, Public and Private Sectors, Multinational

Companies, Universities, and research organizations in India and abroad.

National Institute of Technology Raipur (Formerly Government Engineering College Raipur), situated in the capital of a newly incepted state of Chhattisgarh, has proven to be "avant-grade" in the field of science and technology over the past few decades in this region. With sweet memory of the foundation ceremony by our president Hon'ble Dr. Rajendra Prasad on 14th September 1956. the institute started with two departments namely Metallurgical and Mining Engineering. Later the inauguration of the Institute building was done by our Prime Minister Hon'ble Pt. Jawahar Lal Nehru on 14th March 1963. From 1st December 2005, the institute has become the National Institute of Technology.

The Institute is contributing to the technological, industrial and economical development of the region and the country for last five decades. The Institute has long recognized its role in engineering education, generation and dissemination of useful and relevant technologies in the service of the society.

As you move along the National Highway # 6 (from Raipur to Bhilai) the largest campus which comes to notice and building which strikes your imagination immediately will be that of Govt. Engineering College, Raipur, spread over an area of 100 acres, it is one of the biggest campuses amongst all the technical institutions of Chhattisgarh. The campus is a completely planned entity consisting of the main institute building, six hostel blocks, residential quarters for teaching and non-teaching staff, a bank, a separate PWD and electricity office for campus maintenance, a well-equipped dispensary, and a well-maintained guest house. The campus has got an additional facility of a local railway station meant specially for the benefit of the students of nearby areas. This campus is away from hubbubs of the city yet it is easily accessible from it. The institute is about 5 km from the Raipur railway station and about 12 km from the airport.

The institute has a well-organized, magnificent building symbolizing the grandeur of the institute. This huge building alone covers a total area of 62060 sq.m. It is a triple-storied planned structure along with a central tower standing up to the height of 23 meters. There are 35 lecture halls extending over an area of 6675 sq.m & 13 drawing halls/studios extending over an area of 3510 sq.m. about 85 labs over an area of 11510 sq.m. The other amenities comprise a canteen, cycle stand, N.C.C, N.S.S department, a student activity center co-operative store, and dispensary. The building is being further extended for the architecture and electronics departments with the construction cost of about Rs. 40 Lakh.

VISION :

To be a leader in technical and management education in India and to establish a unique identity for the development of high-quality human and knowledge resources in diverse areas of technology and management.

MISSION :

To mold young students into rational-thinking engineers/individuals who are motivated by a passion for professional excellence driven by human values and proactively engaged in betterment of society.

LOCATION :

Raipur, the capital of Chhattisgarh, has been a place of strategic importance- being the gateway to the mineral-rich Chhattisgarh state, having an enormous potential for development with seemingly inexhaustible natural resources. The city of Raipur is situated on the trunk line connecting Bombay and Howrah at a distance of 831 Km from Howrah and 311 Km from Nagpur on National Highway #6. The location of this institute is in the vicinity of the Bhilai steel plant. Raipur is well connected through air routes from Mumbai, New Delhi, Chennai, Bhubaneshwar, Vizag, Nagpur and Kolkata.

Top 2% World Scientists of NIT Raipur

(Ranking of Stanford University)

National Institute of Technology (NIT) Raipur's fifteen faculty members have been featured in the prestigious list of 'World Ranking of Top 2% Scientists/Researchers' released by the renowned Stanford University, USA, for the year 2025. The list is prepared annually based on multiple parameters and indicators, using Scopus data provided by Elsevier through the ICSR lab, in various fields of Science and Technology, to inculcate and encourage the scientific prowess brewing in the minds of new-age scientists and innovators.

Under the category "Career-long Impact (up to 2024)," which honours sustained contributions and long-term scholarly impact, the following faculty members have been recognized: **Dr. Awanish Kumar**, Associate Professor, Department of Biotechnology; **Dr. Govind Prasad Gupta**, Associate Professor, Department of Information Technology (IT); **Dr. M. K. Pradhan**, Associate Professor, Department of Mechanical Engineering; **Dr. Sachin Jain**, Professor & HoD, Department of Electrical Engineering and **Dr. Subhojit Ghosh**, Professor, Department of Electrical Engineering.

Under the category "Single-Year Impact (2024)," which highlights current, active influence and the recent visibility of research work, the following faculty members have been recognized this year: **Dr. Awanish Kumar**, Associate Professor, Department of Biotechnology; **Dr. Govind Prasad Gupta**, Associate Professor, Department of Information Technology (IT); **Dr. Pradeep Kumar Singh**, Associate Professor, Department of Computer Science and Engineering (CSE); **Dr. Dilip Singh Sisodia**, Associate Professor & HoD, Department of Computer Science and Engineering (CSE); **Dr. Rakesh Tripathi**, Associate Professor, Department of Information Technology (IT); **Dr. Pratima Gupta**, Professor & HoD, Department of Biotechnology; **Dr. Bikesh Kumar Singh**, Associate Professor, Department of Biomedical Engineering; **Dr. Ayush Khare**, Professor, Department of Physics; **Dr. Sudip Kumar Sinha**, Associate Professor, Department of Metallurgy and Materials Engineering; **Dr. Lata Sheo Bachchan Upadhyay**, Professor, Department of Biotechnology; **Dr. D. C. Jhariya**, Associate Professor, Department of Applied Geology; **Dr. Sachin Jain**, Professor & HoD, Department of Electrical Engineering and **Dr. Rajan Kumar**, Assistant Professor, Department of Electrical Engineering. Their recognition stands as a testament to their outstanding contributions across diverse fields of expertise. The faculty members, through their commendable achievements in their respective departments, have brought great laurels to the institute.

In this year's list, **Dr. Avneesh Kumar** has made significant contributions in the field of Pharmacology and Pharmacy. **Dr. Govind Prasad Gupta, Dr. Rakesh Tripathi, Dr. Bikesh Kumar Singh, Dr. Pradeep Kumar Singh,** and **Dr. Dilip Singh Sisodia** are doing notable work in the areas of Artificial Intelligence and Image Processing. **Dr. Pratima Gupta** is contributing to the field of Microbiology.

Dr. Ayush Khare has carried out advanced research in the field of Applied Physics. **Dr. Sudeep Kumar Sinha** has gained expertise in the field of Materials.

Dr. Lata Sheo Bachan Upadhyay has contributed to Biotechnology. **Dr. D. C. Jhariya** is undertaking significant work in the field of Geology. **Dr. Sachin Jain, Dr. S. Ghosh,** and **Dr. Rajan Kumar** have established expertise in the energy sector through Electrical and Electronic Engineering. **Dr. M. K. Pradhan** has made a special contribution to Materials in the field of Mechanical Engineering.

The Institute is increasingly excelling in cultivating a vibrant research environment that fosters collaboration, experimentation, and the exploration of novel ideas. This is evident from the achievements of illustrious young scientists who have proved their mettle, stood their ground, and delivered outstanding results. Further adding to this distinction, **Dr. Awanish Kumar, Dr. Govind P. Gupta,** and **Dr. Sachin Jain** have secured their place in both lists, bringing pride to the institute.

NIT Raipur extends its heartfelt appreciation to all the professors for this remarkable achievement and encourages them to continue nurturing their zeal and passion for science in the service of society and the betterment of the world.

Print Media

[Top 2% World Scientists of NIT Raipur]

हरिभूमि

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Raipur Bhoomi - 26 Sep 2025 - Page 6

एनआईटी के 15 प्रोफेसरों को मिला स्टैनफोर्ड यूनिवर्सिटी का सम्मान



रायपुर। एनआईटी के 15 प्रोफेसरों को वर्ष-2025 के लिए अमेरिका की मशहूर स्टैनफोर्ड यूनिवर्सिटी की 'विश्व के शीर्ष 2% वैज्ञानिकों और शोधकर्ताओं' की सूची में शामिल किया गया है। यह सम्मान उन वैज्ञानिकों को दिया जाता है जो अपनी रिसर्च और विज्ञान के क्षेत्र में बेहतरीन काम कर रहे हैं। इस सूची को हर साल विभिन्न विज्ञान और तकनीकी क्षेत्रों के आधार पर तैयार की जाती है। इसके लिए स्कोपस डेटाबेस के आंकड़ों का इस्तेमाल हुआ, जिसे एल्सेवियर की आईसीएसआर लैब के जरिए तैयार किया। इस पहल का उद्देश्य युवा वैज्ञानिकों और शोधकर्ताओं को प्रेरित करना और उनकी प्रतिभा को निखारना है।

विश्वभर के अनुभवी वैज्ञानिकों के साथ काम करने का मौका

इस सूची में मौजूद प्रत्येक वैज्ञानिक और शोधकर्ताओं को उनकी प्रतिभा के अनुसार चयनित किया गया है। उन्हें अमेरिका के स्टैनफोर्ड यूनिवर्सिटी के अनुभवी वैज्ञानिकों व अधिकारियों के द्वारा चयन किया गया है। इस स्थिति में प्रत्येक प्रोफेसरों का चयन उनकी योग्यता को और अधिक निखारने में मदद करेगा, इससे अन्य युवा पीढ़ी को भी प्रोत्साहित किया जाएगा।

चयनित वैज्ञानिकों और

स्टैनफोर्ड के टाप विज्ञानियों की सूची में एनआइटी के 15 प्रोफेसर

- विश्व के टाप दो प्रतिशत विज्ञानियों की सूची जारी
- सभी प्रोफेसरों ने अपने-अपने क्षेत्र में दिया महत्वपूर्ण योगदान



डा. दिलीप सिंह



डा. गोविंद प्रसाद



डा. प्रतिमा गुप्ता



डा. अवनीश कुमार

नईदुनिया प्रतिनिधि, रायपुर : राष्ट्रीय प्रौद्योगिकी संस्थान (एनआइटी) रायपुर के 15 प्रोफेसरों का नाम स्टैनफोर्ड यूनिवर्सिटी की तरफ से जारी विश्व के टाप दो प्रतिशत विज्ञानियों की सूची में शामिल है। यह सूची एल्सेवियर द्वारा आइसीएसआर लैब के माध्यम से उपलब्ध स्कोपस डेटा पर आधारित है। करियर लांग इम्पैक्ट (2024) श्रेणी में बायोटेक्नोलाजी विभाग के डा. अवनीश कुमार, आइटी विभाग के डा. गोविंद प्रसाद गुप्ता, मैकेनिकल इंजीनियरिंग के डा. एमके प्रधान, इलेक्ट्रिकल इंजीनियरिंग के विभागाध्यक्ष डा. सचिन जैन और प्रोफेसर डा. सुभोजित घोष शामिल हुए हैं।

सिंगल इयर इम्पैक्ट (2024) श्रेणी में बायोटेक्नोलाजी विभाग के डा. अवनीश कुमार, आइटी विभाग के डा. गोविंद गुप्ता व डा. राकेश त्रिपाठी, सीएसई विभाग के डा. प्रदीप कुमार सिंह और विभागाध्यक्ष डा. दिलीप सिंह सिसोदिया, बायोटेक्नोलाजी विभागाध्यक्ष डा. प्रतिमा गुप्ता, बायोमेडिकल इंजीनियरिंग के डा. बिकेश कुमार सिंह, भौतिकी विभाग के डा. आयुष खरे, मेटलर्जी एंड मटेरियल्स इंजीनियरिंग के डा. सुदीप सिन्हा, बायोटेक्नोलाजी विभाग की प्रोफेसर डा. लता शिव बच्चन उपाध्याय, एप्लाइड जियोलाजी विभाग के एसोसिएट प्रोफेसर डा. डी. सी. झारिया, इलेक्ट्रिकल इंजीनियरिंग विभाग के प्रोफेसर और विभागाध्यक्ष डा. सचिन जैन और इलेक्ट्रिकल इंजीनियरिंग विभाग के असिस्टेंट प्रोफेसर डा राजन कुमार के नाम शामिल हैं। ऐसे ही पं. रविवि के इंस्टीट्यूट आफ फार्मेसी के प्रो. शैलेन्द्र सारफ, प्रो. स्वर्णलता सारफ, प्रो. मंजू सिंह, प्रो. दीपेन्द्र सिंह, प्रो. अंबर व्यास और रसायन शास्त्र अध्ययन शाला के प्रो. कमलेश श्रीवास हैं। वही टिपलआईटी के डॉ. स्कुल जैन और असिस्टेंट प्रोफेसर डा. राजन कुमार को स्थान मिला है। इन विज्ञानियों ने आर्टिफिशियल इंटेलिजेंस, इमेज प्रोसेसिंग, माइक्रोबायोलाजी, फार्माकोलाजी, फिजिक्स, मटेरियल्स, जियोलाजी और इलेक्ट्रिकल इंजीनियरिंग जैसे विविध क्षेत्रों में उल्लेखनीय योगदान दिया है।

नवभारत
छत्तीसगढ़ • उत्कल

Rajdhani - 26 Sep 2025 - 26r
epaper.navabharat.news

स्टैनफोर्ड यूनिवर्सिटी के शीर्ष 2 वैज्ञानिकों में एनआईटी 15 प्रोफे



रायपुर। राष्ट्रीय प्रौद्योगिकी स (एनआईटी) रायपुर के पंद्रह प्रोफेस वर्ष 2025 के लिए अमेरिका की स्टैनफोर्ड यूनिवर्सिटी द्वारा जारी की ग के शीर्ष 2% वैज्ञानिकों की रैंकिंग की प्रतिष्ठित सूची में शामिल कि है। इस सूची में बायोटेक्नोलॉजी विभाग के एसोसिएट प्रोफे अवनीश कुमार, सूचना प्रौद्योगिकी (आईटी) विभाग के एसोसिएट डॉ. गोविंद प्रसाद गुप्ता, मैकेनिकल इंजीनियरिंग विभाग के ए प्रोफेसर डॉ. एम. के. प्रधान, इलेक्ट्रिकल इंजीनियरिंग विभाग के और विभागाध्यक्ष डॉ. सचिन जैन और इलेक्ट्रिकल इंजीनियरिंग प्रोफेसर डॉ. सुभोजित घोष के नाम शामिल हैं।

यूनिवर्सिटी ने जारी की वैज्ञानिकों की रैंकिंग की प्रतिष्ठित सूची

विश्व के शीर्ष 2% वैज्ञानिकों में शहर के 22 प्रोफेसर, एनआईटी के 15

इनके नाम टॉप 2 प्रतिशत वैज्ञानिकों में

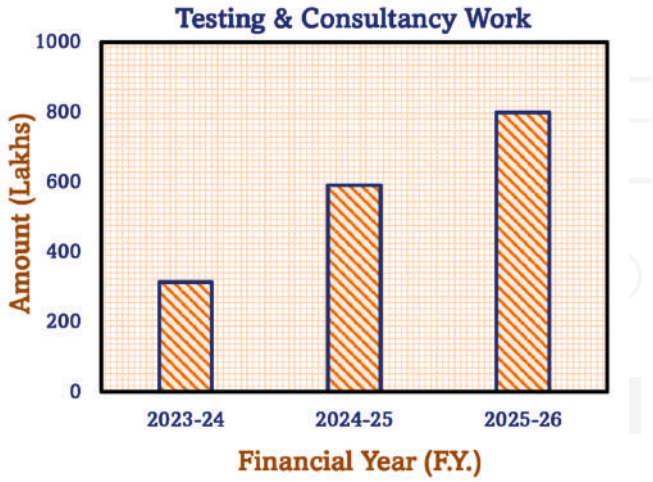
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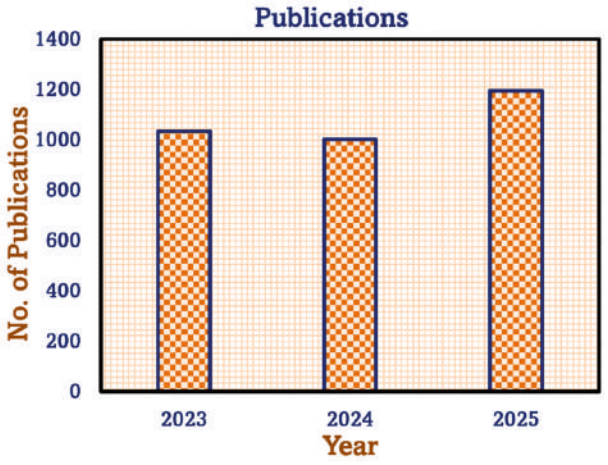
रायपुर @ पत्रिका. अमरीका की प्रसिद्ध स्टैनफोर्ड यूनिवर्सिटी द्वारा जारी विश्व के शीर्ष 2% वैज्ञानिकों की रैंकिंग की प्रतिष्ठित सूची में शहर के 22 प्रोफेसर शामिल हैं। इनमें सबसे ज्यादा एनआईटी रायपुर के 15 प्रोफेसर के साथ पं. रविशंकर शुक्ल विश्वविद्यालय के 6 और टिपलआईटी के एक प्रोफेसर शामिल हैं। यह सूची प्रतिवर्ष विभिन्न विज्ञान और प्रौद्योगिकी क्षेत्रों में अनेक मानकों और सूचकांकों के आधार पर, एल्सेवियर द्वारा आईसीएसआर लैब के माध्यम से उपलब्ध कराए गए स्कोपस डेटा का उपयोग करके तैयार की जाती है, ताकि नई पीढ़ी के वैज्ञानिकों और नवप्रवर्तकों के मस्तिष्क में पनप रही वैज्ञानिक क्षमता को प्रोत्साहित और विकसित किया जा सके। इसे शोध उत्पादकता, शोध पत्रों की गुणवत्ता, प्रभाव कारक और वैश्विक उद्धरण जैसे मानकीकृत संकेतकों के आधार पर तैयार किया

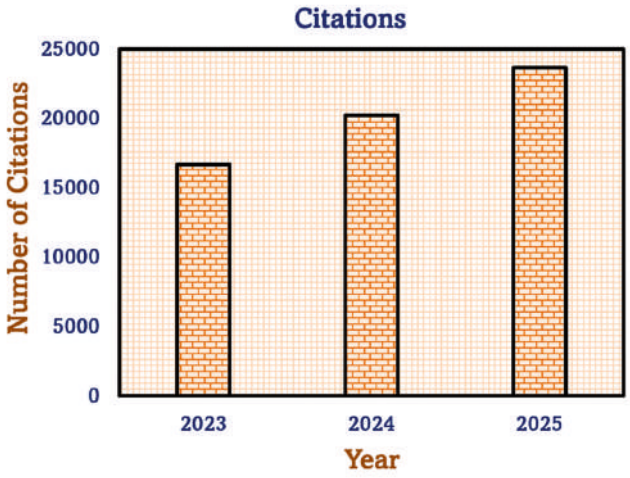
एनआईटी में करियर लॉन्ग इम्पैक्ट श्रेणी की सूची में बायोटेक्नोलॉजी विभाग के एसोसिएट प्रोफेसर डॉ. अवनीश कुमार, सूचना प्रौद्योगिकी विभाग के एसोसिएट प्रोफेसर डॉ. गोविंद प्रसाद गुप्ता, मैकेनिकल इंजीनियरिंग विभाग के एसोसिएट प्रोफेसर डॉ. एम. के. प्रधान, इलेक्ट्रिकल इंजीनियरिंग विभाग के प्रोफेसर और एचओडी डॉ. सचिन जैन और इलेक्ट्रिकल इंजीनियरिंग विभाग के प्रोफेसर डॉ. सुभोजित घोष के नाम शामिल हैं। वहीं, सिंगल इयर इम्पैक्ट श्रेणी में बायोटेक्नोलॉजी विभाग के एसोसिएट प्रोफेसर डॉ. अवनीश कुमार, सूचना प्रौद्योगिकी विभाग के एसोसिएट प्रोफेसर डॉ. गोविंद प्रसाद गुप्ता, कंप्यूटर विज्ञान और अभियांत्रिकी विभाग के एसोसिएट प्रोफेसर डॉ. प्रदीप कुमार सिंह, कंप्यूटर विज्ञान और अभियांत्रिकी विभाग के एसोसिएट प्रोफेसर और एचओडी डॉ. दिलीप सिंह सिसोदिया, सूचना प्रौद्योगिकी विभाग के एसोसिएट प्रोफेसर डॉ. विभाग की प्रोफेसर और विभागाध्यक्ष डॉ. प्रतिमा गुप्ता, बायोमेडिकल इंजीनियरिंग विभाग के एसोसिएट प्रोफेसर डॉ. बिकेश कुमार सिंह, भौतिकी विभाग के प्रोफेसर डॉ. आयुष खरे, मेटलर्जी एंड मैटेरियल्स इंजीनियरिंग विभाग के एसोसिएट प्रोफेसर डॉ. सुदीप कुमार सिन्हा, बायोटेक्नोलॉजी विभाग की प्रोफेसर डॉ. लता शिव बच्चन उपाध्याय, एप्लाइड जियोलॉजी विभाग के एसोसिएट प्रोफेसर डॉ. डी. सी. झारिया, इलेक्ट्रिकल इंजीनियरिंग विभाग के प्रोफेसर और विभागाध्यक्ष डॉ. सचिन जैन और इलेक्ट्रिकल इंजीनियरिंग विभाग के असिस्टेंट प्रोफेसर डॉ राजन कुमार के नाम शामिल हैं। ऐसे ही पं. रविवि के इंस्टीट्यूट ऑफ फार्मेसी के प्रो. शैलेन्द्र सारफ, प्रो. स्वर्णलता सारफ, प्रो. मंजू सिंह, प्रो. दीपेन्द्र सिंह, प्रो. अंबर व्यास और रसायन शास्त्र अध्ययन शाला के प्रो. कमलेश श्रीवास हैं। वही टिपलआईटी के डॉ. स्कुल

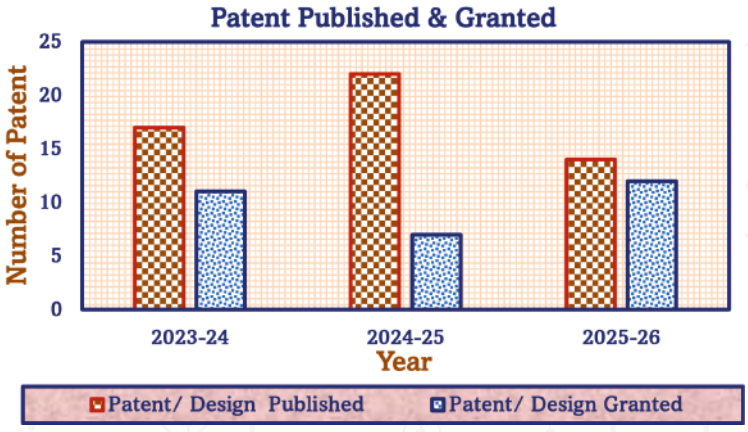
Research Details of the Institute











Office of the Dean
(Research and Consultancy)



Dr. Guru Prasad Subas Chandra Mishra
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APPLIED GEOLOGY

Head of the Department	:	**Dr. Neeraj Vishwakarma**
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Contact	:	**09165979542**

About the Department

Established in 1961, the Department of Applied Geology has grown progressively into a center of excellence in geoscience education, research, and consultancy. The department offers an M.Tech. programme in Applied Geology with an approved intake of nineteen students and currently supervises a good number of Ph.D. scholars, reflecting its strong research orientation and academic vibrancy.

The department is supported by a committed team of seven faculty members, comprising one Professor, two Associate Professors, and four Assistant Professors. Their collective expertise spans diverse domains of geosciences, contributing to both academic and research excellence.

The department maintains a strong research profile, publishing approximately 30 research papers annually in high-impact SCI and Scopus-indexed journals. It continuously integrates emerging technologies and interdisciplinary approaches, ensuring its leadership in advanced geological research and innovation.

The department has successfully executed and is currently undertaking several funded research projects supported by prominent national and state-level organizations, including: MOIL, CGCOST, Government of Chhattisgarh, Science & Engineering Research Board (SERB), DST, Indian Council of Medical Research (ICMR), ISRO, Ministry of Environment, Forest & Climate Change (MoEF & CC), Ministry of Jalshakti, Govt of India among others In addition to sponsored research, the department actively collaborates with industry partners and provides consultancy services to reputed organizations such as: NHAI, SECL, Jindal Steel & Power Ltd., Limestone mining industries, IRCON International Limited, Other public and private sector enterprises

The Department of Applied Geology offers specialized consultancy services in the following areas: Engineering Geology, Hydrogeology, Water resource development and management, Petrology, Geological mapping, Remote sensing, GIS applications etc.These services support sustainable natural resource management, infrastructure planning, environmental impact assessment, and evidence-based decision-making for government agencies, private industries, and research institutions.

The department provides internship opportunities to undergraduate and postgraduate students in diverse domains, including Structural Geology, Mineralogy, Petrology, Geochemistry, Engineering Geology, Hydrogeology, and Environmental Geology, Remote Sensing and GIS, Water Resource Development and Management, Planetary Geology

Alumni serve in reputed organizations across mining, mineral exploration, environmental consultancy, groundwater management, and engineering geology in India and abroad, where they hold key technical and managerial positions in major corporations, government agencies, and multinational companies, contributing significantly to large-scale engineering and resource development projects.The faculty members are internationally recognized researchers and have been listed among the world's top 2% most influential scientists in Geology. They actively contribute to national-level committees and professional bodies as expert panellists and play a significant role in governmental initiatives by serving as external experts on various statutory and advisory committees.

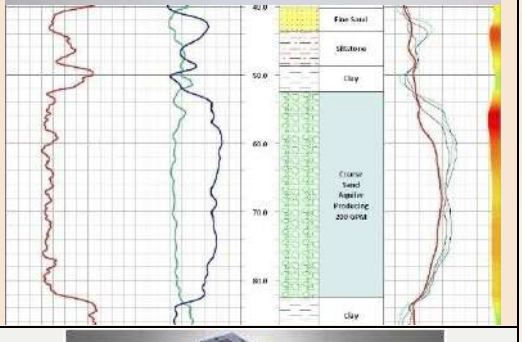
FacultyDetails

S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 **Dr. Prabhat Diwan** (Professor) pdiwan.geo@nitrr.ac.in	Structural Geology & Tectonics	https://www.scopus.com/authid/detail.uri?authorId=57193434187
2.	 **Dr. N. Vishwakarma** (Professor) nvishwakarma.geo@nitrr.ac.in	Mineralogy, Petrology, Geochemistry, Engineering Geology	https://www.scopus.com/dashboard.uri?origin=sbrowse&zone=TopNavBar
3.	 **Dr. D.C. Jhariya** (Professor) dcjhariya.geo@nitrr.ac.in	Hydrogeology, Environmental Geology, Remote Sensing and GIS Application in Water resource development and management	https://www.scopus.com/authid/detail.uri?authorId=56520268400
4.	 **Dr. Himanshu Govil** (Assistant Professor) hgovil.geo@nitrr.ac.in	Remote sensing, GIS, Mineral exploration, Engineering geology& Environmental Geology	https://scholar.google.co.in/citations?user=9R46F4YAAAAJ&hl=en
5.	 **Dr. Rohit Kumar Giri** (Assistant Professor) rkgiri.geo@nitrr.ac.in	Alkaline rocks, Lamprophyres & amp; Carbonatites Geochemistry, Petrology, Mineralogy, Isotope Geochemistry, Geochronology, Precambrian Geology, Stable Isotope Geochemistry, Mineral Chemistry, Optical Mineralogy and Instrumentations.	https://scholar.google.co.in/citations?user=Oha_zr0AAAAJ&hl=en

Research Facilities			
S.No.	**Research & Testing Facility**	**Key Features of Equipment**	**Instrument Images**
1.	Rock Cutting Machine	Cutting of Rocks Minerals and Ores	
2.	Grinding Machine	Grinding and Polishing of Rocks Minerals and Ores	
3.	Slicing and Grinding Machine	Slicing and Grinding of Rocks Minerals and Ores	

4.	Agate Mortar	Powdering of the Materials	
5.	Advanced Polarizing Cum Reflecting Microscope with photographic facility.	Petrographic Study of Rocks, Minerals and Ores.	
6.	Reflecting Light Microscopes	For Ore Mineral Study	
7.	Polarizing Microscopes	For Rocks and Minerals Study	

8.	Stereozoom Microscope with photographic Facility	For Microfossil study and grain separation	
9.	Stereozoom Microscope	For Microfossil study	
10.	Field Kit	For Geological Field work	
11.	Schmidt Hammer	Determination of strength of rock	
12.	Schmidt Hammer Digital	Determination of strength of rock	

13.	Resistivity meter	GD-10 is developed based on the latest digital and analog circuitry techniques, making it the world-leading multi-functional direct current (DC) method instrument. GD-10 Multi-Electrode Resistivity Imaging System is capable of conducting 2D/3D cross-section profiling of subsurface lithology. The depth of penetration of this equipment is 60 meters with available equipment cables and accessories.	
14.	Continuous Well Logger	Specifically designed for high-resolution resistivity and induced polarization sounding and profiling. The equipment is ideal for archaeological, subsurface geological mapping, civil engineering, and well-logging applications.	 
15.	Flame Photometer	The instrument is used for the measurement of alkali metals and alkali earth metals by measuring the intensity of radiation that is emitted during their path of return from an excited state to the ground state.	
16.	Multi parameter	Portable ion selective electrode with measurement instrument used for the testing of physical parameters (pH, EC, TDS, Salinity, DO, etc.) of the water samples. Helpful for the field analysis of water samples.	

17.	Spectro Photometer	It is used for the analysis of chemical parameters of the water (Pb, Zn, Cu, Fe, NO3, SO4, etc.) by measuring the reflection or transmission properties of the materials.	
18.	Laboratory distillation unit	Consists of two distillation units used for the preparation of double distilled water.	
19.	Analytical Balance	As an accessory instrument used for weighing the chemicals and other substances for the analysis purpose.	
20.	Water level Indicator	Portable Water level indicator working by the use of DC, which is associated with the sensor, is used for the measurement of the water level.	
21.	Fumehood	This helps to prevent the analyst from exposure to hazardous or toxic fumes, vapours or dust.	
22.	Magnetic Stirrer with Bars	This instrument helps to dissolve the solvents in the solutions with the use of a rotating magnetic field.	

23.	Laboratory Oven	Uses for the sterilization of the glassware and processing of chemicals for the analysis.	
24.	Vacuum Filtration Unit	AC-operated filtration unit helps for the filtration of turbid water samples by suction.	
25.	Image Processing and GIS Software	For satellite data processing and modelling	ERDAS IMAGINE® Versatile Seamless Complete ArcGIS ENVI
26.	DGPS	DGPS Ground survey	 
27.	Unmanned Aerial Vehicle	For ground and aerial survey	
28.	Unmanned Aerial Vehicle Software	UAV data processing for 3D mapping	PIX4D MAPPER

29.	Ground Penetrating Radar	Subsurface analysis	
30.	Total Station	Surveying	
31.	Atomic Absorption Spectrophotometer	Atomic absorption spectrometry (AAS) is an easy, high-throughput, and inexpensive technology used primarily to analyse elements in solution.	
32.	UVVisible Spectrophotometer	UVVisible Spectrophotometer is used for quick, convenient, and inexpensive equipment determining the solution concentration of an analyte.	

****The details of testing and consultancy charges can be obtained from the following link:***

- https://www.nitrr.ac.in/aboutgeology.php
- https://www.nitrr.ac.in/downloads/forms/Testing%20Charges%20effective%20from%201st%20January%202016%20Civil%20Department.pdf
- Contact the Head of the Department of Applied Geology for further information.

ARCHITECTURE AND PLANNING

Head of the Department : **Dr. Debashis Sanyal**
Email : **hod.arch@nitrr.ac.in**
Contact : **09826131952**

About the Department

In the spring of 1984, the Department of Architecture and Planning emerged as a part of the then Government Engineering College (GEC) Raipur with an intake of 20. In 2005, GEC Raipur turned into National Institute of Technology, Raipur (NIT Raipur). The present intake of the Department is40. The Department has been renamed to the Department of Architecture and Planning in 2024 with the opening of M.Tech course in Urban Planning with an intake of 20 students.

The Department stands as a center of creativity within the campus of NIT Raipur. It is determined to give its best to the society, in the form of architects and planners, who would be able to not only carve out spaces to create build forms as per the need and requirement of the Society and would be able to visualize, shape and design urban and rural areas.

The demand of professional Architects and Planners is increasing progressively in the society. The endeavor of the Department is to deliver these professionals for the benefit of mankind that would not only solve the problems of built environments today but also would shape it for the future generations. This is proven true by the 800 plus alumni who have been working across the globe for the past years.

The program involves theories, studios, and site studies which help the students to explore a range of design investigations, expand knowledge and confront the challenges of the contemporary built environment. The subjects are carefully chosen to not only instigate the modern context but also learn and incorporate the vernacular and traditional visions.

The department is actively involved in various research and consultancy projects notably the Preparation for the proposal of rational requirement for site plan of Sickle Cell Institute, Raipur, Chhattisgarh, Vetting working drawing for m/s. Disabilities Sports Complex, Swej Farm Village opp. IITM in Khel Gaon, AB Road (MP), Preparation of Architectural drawings for introduction of new roofing system with allied details of the construction of Auditorium building at AIIMS Raipur, Consultancy service for the Noise Control Measures at LIC building of CS Reliance Gas Pipelines Limited Tehsil Budhar District Shahdol, MP, Preparation of comprehensive development plan for Bhilai Steel Plant Township, Master Planning and Conceptual Design Services for Ekam Cultural Centre at Ayodhya etc. The department has also taken over many research projects for prestigious organizations, among which the recent project was to develop Gram Panchayat Saptial Development Plan for two villages of Chhattisgarh state under ministry of Panchayati Rah GoI, Perception Based Pradhan Mantri Awas Yojna for PVTGs in Tribal Regions of Chhattisgarh Enhancement of Gram Panchayat Spatial Development Plan (GPSDP).

Faculty Details

S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 **Dr. Debashis Sanyal** (Professor – Head of Department) debashissanyal@rediffmail.com	Smart City, Eco city, Super tall Buildings, Self Sufficient Housing, Industrialised Mass Housing, Indoor Air Quality,	https://scopus.com/authid/detail.uri?authorId=57196580175
2.	 **Dr. Abir Bandyopadhyay** (Professor - HAG) abandyopadhyay.arch@nitrr.ac.in	History of Architecture, Town Planning, Space Syntax Analysis,	https://www.scopus.com/authid/detail.uri?authorId=57991332600
3.	 **Dr. Swasti Sthapak** (Professor) ssthapak.arch@nitrr.ac.in	Climate Responsive Architecture, Town Planning, Environment& Ecology	https://www.scopus.com/authid/detail.uri?authorId=57985844500
4.	 **Dr. Himanshu Poptani** (Assistant Professor) hpoptani.arch@nitrr.ac.in	Energy Efficient & Solar Passive Architecture, Climatology, Sustainable settlements, Urban Design, Environmental Planning & Management, Building Materials & Construction	https://scholar.google.com/citations?user=cEbnRwgAAAAJ&hl=en&oi=ao
5.	 **Dr. Vandana Agrawal** (Assistant Professor) vagrawal.arch@nitrr.ac.in	Town Planning, Environmental Planning, Graphics, Housing, Urban Renewalz	https://www.scopus.com/authid/detail.uri?authorId=58193111200

6.	 **Dr. Vivek Agnihotri** (Assistant Professor) vagnihotri.arch@nitrr.ac.in	Urban Informatics. Spatial Planning, Housing, Quality of Life	https://www.scopus.com/authid/detail.uri?authorId=57223109174
7.	 **Dr. Shruti Sharad Nagdeve** (Assistant Professor) ssnagdeve.arch@nitrr.ac.in	Project Management, Construction Management, Building Façade, Occupant Comfort	https://www.scopus.com/authid/detail.uri?authorId=58087570600&origin=resultslist
8.	 **Dr. Sachin Kumar Sahu** (Assistant Professor) sksahu.arch@nitrr.ac.in	Housing, Affordable Housing, Transport Planning, MRTS	https://scholar.google.com/citations?user=ogmq4DQAAAAJ&hl=en&oi=ao
9.	 **Shailoneil Sahu** (Assistant Professor) ssahu.arch@nitrr.ac.in	Thermal Comfort, Green Infrastructure Environmental Planning Sustainable Development, Climate Responsive	https://scholar.google.com/citations?authuser=1&user=WNoDbO4AAAAJ
10.	 **Kabita Biswas Sharma** (Assistant Professor) kbiswas.arch@nitrr.ac.in	Environmental Planning, Climate Responsive Architecture, Energy Efficiency, Disaster Management, Sustainable Development	https://scholar.google.com/citations?user=cXT4OZUAAAAJ&hl=en
11.	 **Devanshi Gaur** (Assistant Professor) dgaur.arch@nitrr.ac.in	Fire and Life Safety, Conservation	https://scholar.google.com/citations?view_op=new_profile&hl=en

Research Facilities			
S.No.	**Research & Testing Facility**	**Key Features of Equipment**	**Instrument Images**
1.	3D Printing Machine	Used for 3D printing of the small models and elements.	
2.	A0 Plotter	Used for plotting and pinting of architectural drawing sheets.	
3.	Combi Planar Machine	Used for wood smoothening the wooden surface, wood cutting, wood leveling and making groves in wood.	

4.	Electric Potters Wheel	Used for pottery purpose, making clay models , etc.	
5.	Fret Shaw Machine	To cut in any desired and linear shape in wood, plywood, etc.	
6.	HOBO Data Logger	Used for continuous measurement and data collection of temperature and humidity.	
7.	Laser Cutting Machine	Used for laser cutting of thin sheets for making architectural models.	

8.	Power Chain Mortiser	To cut large/small blocks of wood chained in a frame.	
9.	Theodolite	Used for surveying an detemining the horizontal and vertical angles.	
10.	Total Station	Used for topographic surveys, digital total station is capable of gathering DWG drawings of survey.	
11.	Zodiac cutting machine	For thermocol sutting with the help of hot wire.	

*****The details of testing and consultancy charges can be obtained from the office of Head of the Department of Architecture and Planning.***

BIOMEDICAL ENGINEERING

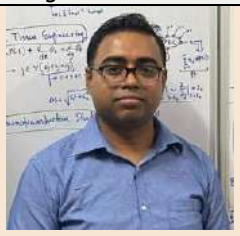
Head of the Department	:	**Dr. Arindam Bit**
Email	:	hod.bme@nitrr.ac.in
Contact	:	0399603267

About the Department

The Department of Biomedical Engineering was established in 2003 with a sanctioned strength of 30 in Undergraduate course of Biomedical Engineering. Present strength in the undergraduate program is 81. Department has also started M.Tech program in Medical Devices with Specialisation in IVD and Critical Care in year 2025 with an intake of 30 students. This Program has been funded by Department of Pharmaceutics, under the ministry of Chemicals and Fertilisers. The department has executed more than 25 research projects funded by different funding agencies, with an approximate funding of more than Rs. 18 Crore. The department has currently more than 20 high end research equipment. The department has an average annual publication rate of 30 journal papers. It has been regularly organizing many training and short-term courses in the last 10 years. The department has also organized high end government sponsored workshops like GIAN, Karyashala, SPARC since the last 5 years.

The faculty members of the Department have multiple collaborations with various QS ranked foreign universities for conducting high end, joint research work. The department has strong collaboration with medical colleges in Raipur for conducting joint technological driven research work in the healthcare sector.

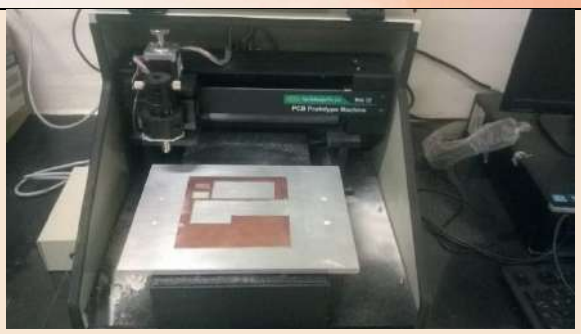
The department has sanctioned strength of 12 faculty members with 03 Associate Professors, 07 Assistant Professors and 02 Contract Faculties. Departmental faculties cover expertise in the field of Artificial Intelligence, Machine learning, Medical Image Processing, Medical Signal Processing, Computational Neuroscience, Medical Device Development, Biomechanics, Biomaterials, Tissue Engineering, Microfluidics, Point of Care Device Development, IVD, Sensor development.

Faculty Details			
S.No.	**Name of the Faculty**	**Key Research Areas**	**Research Link**
1.	 Dr. Bikesh Kumar Singh (Professor) bsingh.bme@nitrr.ac.in	Biomedical Signal Processing (EEG, PPG, Lung sounds), Medical Image Processing and Analysis, Computational Neuroscience, Computer Aided Diagnosis, Deep Learning and Machine Learning Applications in Healthcare	https://scholar.google.com/citations?user=4E8dj5wAAAAJ&hl=en&oi=ao
2.	 Dr. Arindam Bit (Associate Professor) arinbit.bme@nitrr.ac.in	Multi-scale Biofluid mechanics, Cognitive Neuroscience, Tissue Engineering, Fluidic Medical Devices	https://scholar.google.com/citations?user=RIy8SUkAAAAJ&hl=en&oi=ao
3.	 Dr. Neelam shobha Nirala (Associate Professor) neelanir.bme@nitrr.ac.in	Signal Processing, Image processing, Photo plethysmogram, Machine Learning and Deep Learning	https://scholar.google.com/citations?user=oP3oZR8AAAAJ&hl=en&oi=ao
4.	 Dr. Saurabh Gupta (Associate Professor) sgupta.bme@nitrr.ac.in	Inverse Problems, Stochastic Optimisation, Medical Imaging, Artificial Intelligence & Consciousness, Medical Device Innovation & Entrepreneurship, Bioastronautics, Climate Health.	https://scholar.google.com/citations?user=uAtMRYAAAAAJ&hl=en&oi=ao

5.	 Dr. Nishant Kumar Singh (Assistant Professor) nksingh.bme@nitrr.ac.in	Computational & Multiscale Biomechanics, Orthopedic & Dental Implant Biomechanics, Biomaterials, Finite Element Analysis, Rehabilitation Engineering	https://scholar.google.com/citations?user=pJJs0EcAAAAJ&hl=en
6.	 Dr. M. Marieswaran (Assistant Professor) mmarieswaran.bme@nitrr.ac.in	Experimental & amp; Orthopaedic Biomechanics, Medical Instrumentation, Biosensors, MEMS Fabrication, 3D-Printing	https://scholar.google.com/citations?user=-8xw_wMAAAAJ&hl=en&oi=ao
7	 Dr. Shivangi Giri (Assistant Professor) sgiri.bme@nitrr.ac.in	Computational Biomechanics, Human Musculoskeletal Modelling, Rehabilitation Engineering	https://scholar.google.com/citations?view_op=list_works&hl=en&user=Ys_mQcQAAAAJ
8	 Dr. Mainak Basu (Assistant Professor) mbasu.bme@nitrr.ac.in	Microfluidics and Digital Microfluidics; MEMS, Bio-MEMS, NEMS; Electrochemical and Optical methods for diagnostic devices; Biosensors and Biomedical Instrumentation	https://scholar.google.com/citations?user=fd9X-JkAAAAJ&hl=en&oi=ao

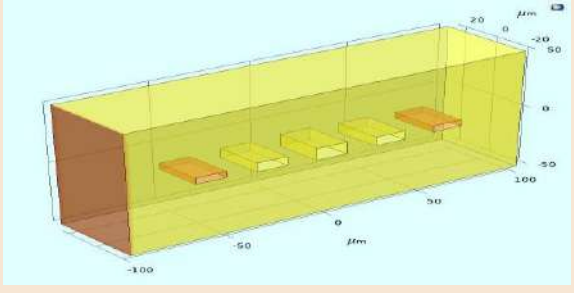
9	 **Dr. Sudip Paul** (Associate Professor) spaul.bme@nitrr.ac.in	Biomedical Instrumentation, Electrophysiology, Medical Device, Cognitive Neuroscience, AI in Healthcare	https://scholar.google.com/citations?user=00L4dj0AAAAJ&hl=en
10	 **Dr. Souvik Biswas** (Assistant Professor) sbiswas.bme@nitrr.ac.in	Electrochemical Biosensors, Computational Nano-Electronics, ML for Sensing Applications, Brain Computer Interface	https://scholar.google.com/citations?user=2aJ9rG8AAAAJ&hl=en

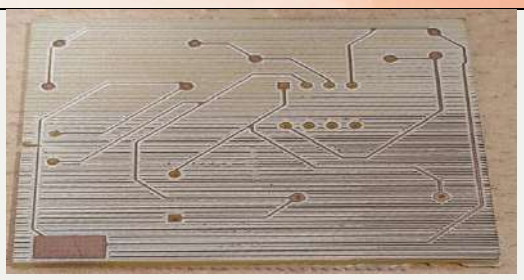
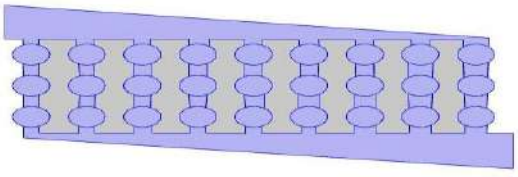
Research Facilities			
S.No.	**Research & Testing Facility**	**Key Features of Equipment**	**Equipment Image**
1.	RMS Maximus 32 Portable EEG Machine	This system will be useful for recording acquiring neurological signals from 32 channels.	
2.	fNIRS Imaging system	This system will be useful for acquiring oxygen level of transcutaneous tissues.	
3.	BIOPAC Data Acquisition System (4 Channel)	This system can be used for acquiring low magnitude signal data using electrode system.	
4.	DELSYS wireless EMG acquisition system	This system will be used for measuring electrical activities of muscles.	
5.	Advanced optical fiber system	This system is used for measurement of optical loss in an optical fibre cable.	

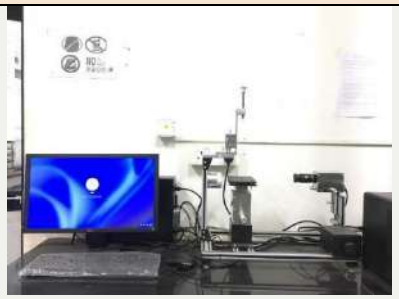
6.	NVIS PCB printing prototype machine	This system can be used for fabricating printed circuit board prototype.	
7.	Ultrasound Doppler machine	This system can be used for measuring blood flow in major arteries and veins transcutaneously.	
8.	Load cell trainer kit	This system can be used for calibrating load cells.	
9.	Littman Electronic Stethoscope	This system can be used for measurement of heart and lung sound digitally.	
10.	actiCHamp 64 channel EEG recorder system	This system can be used for acquiring 68 channel electrical potential from human brain.	

11.	16 channel AD instruments data acquisition system	This system can be used for acquiring biological signals from human body.	
12.	Inverted Fluorescence Microscope	This system will be used for acquiring microscopic images in dark field and bright field microscopy.	
13.	Carbon dioxide Incubator	This system will be used for incubating biological samples.	
14.	Biosafety Cabinet Class B	This system can be used for conducting clean room experiments	
15.	-80^0 C Freezer	This system can store samples at a temperature of -80 degree centigrade	

16.	Electrospinning Machine for nanofiber fabrication	This system can be used for generating polymeric nano fibers	
17.	Lyophilizer based freeze drying	This system can be used for vacuum drying of non-alcoholic samples	
18.	Oxygen Plasma Cleaner	This system will be used for bonding between two materials	
19.	Spin-coater for nano-film coating	This system will be used for nano-coating	
20.	3-D Printer filament based	This system will be used for perform filament based 3D printing	

21.	Syringe Pump for Infusion pumping	This system will be used for transfusing fluidic samples at regulated flow rate.	
22.	Microviscometer for viscosity and density measurement	This system will be used for measuring kinematic viscosity of micro-volume samples.	
23.	Microfluidic chip fabrication for customer design (in triplicate setting): PMMA based	This system can be used for fabricating sub-mini channels for quasi microfluidic applications	
24.	Microplate Reader	This system can be used for measuring optical density of polymeric and biological liquid sample	
25.	Cognitive battery designing with event markers	This facility can be used for developing cognitive experimental protocols and validations for advertisement agencies	
26.	CFD study in micro-channel domain	This facility can be used for design optimisation of micofluidic channels	

27.	PCB circuit design and fabrication	This facility can be used for designing PCB circuit board form electrical circuit diagram	
28.	Customized bioreactor designing facility	This facility can be used for developing custom-needed micro-bioreactor design and development	
29.	Mobile Lab	This system can be used for conducting primary point of care screening of health vitals	
30.	AR-VR	This system can be used for Augmented reality experiment design	
31.	Workstation Z 840	This is a high-end computing facility	

32.	Universal Testing Machine (UTM) 10 kN for Biomaterial	This system can be used for measuring stress-strain relationship in polymeric materials	
33.	Contact Angle Equipment	This system can be used for measuring contact angle between a liquid and a solid sample	
34.	Surface Roughness Equipment	This system can be used for measurement of roughness of a surface	
35.	High End Workstation for Reverse Engineering & FEA for Biomechanical Problems	This facility can be used for conducting FEA modelling of human hard and soft tissue	
36.	Semi Auto Biochemistry Analyzer	This system can be used for analysing chemical and biological samples for salt estimations	

37.	Patent Monitor	This system can be used for measuring human vital parameters in ICU and OT of a hospital	
38.	FDM Dual Extrusion 3D Printer	This system can be used for dual extrusion printing of polymeric jet materials	
39.	Desktop Polymeric FIlament Extruder	This system can be used for fabricating filament from polymeric liquid	
40	DC Sputtering System	This system can be used for coating of surfaces in plasma sta te	

41	Potentiostat	Cyclic voltametric characterisation of the developed electrodes / sensors can be done.	

The details of testing and consultancy charges can be obtained from the office of Head of the Department of Biomedical Engineering.

BIOTECHNOLOGY

Head of the Department : **Dr. Pratima Gupta**
Email : **hod.bt@nitrr.ac.in**
Contact : **09229557174**

About the Department

Department of Biotechnology was established in the year 2003 at NIT Raipur. The sectioned student strength in B.Tech Biotechnology program is 79. The total faculty strength of the department is 09 and department offers B. Tech. and PhD programs. The department has completed 16 extramural research projects funded by various national and international funding agencies and more than 03 research projects are ongoing. The projects primarily belong to the water treatment technology, modelling and optimization studies of bioprocesses, biosensors, drug discovery for fungal and bacterial infections, development of advanced drug delivery system, fabrication of hemo-filtration system, etc.

Department has published more than 600 research papers in SCI journals, 22 patents, 52 book chapters and 10 books. Department has organized conferences, workshops, and expert lectures. Department has produced 25 PhD students, and 30 PhDs are ongoing. The faculty members of the department are recognized in the top 2% or above scientists of the world according to the analysis of Stanford University USA and Elsevier. The faculty members of the department are recipients of many other international/national awards. Ph.D. students of department received Young Scientist award, best paper presentation award, *etc*. B.Tech students of department have joined higher studies in the universities abroad, IITs, NITs, and many are placed in various MNCs like Wipro, Tredence, Genpact, *etc*.

Faculty Details

S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 Dr. Pratima Gupta (Professor) pgupta.bt@nitrr.ac.in	Bio prospects of microorganisms: Microbial biofilms, Microbial products and process technology. Microbial electrochemical technology for biotechnological applications, Bio Microfluidics.	https://www.scopus.com/authid/detail.uri?authorId=7404234670

2.	 Dr. Lata S. B. Upadhyay (Professor) lupadhyay.bt@nitrr.ac.in	Biochemistry/Enzyme Technology, Biosensor development and alternative energy production	https://www.scopus.com/authid/detail.uri?authorId=36940270100
3.	 Dr. Awanish Kumar (Associate Professor) awanik.bt@nitrr.ac.in	Antimicrobial Resistance, Host- Pathogen Interaction, Drug Target & Biomarker Identification, Drug Discovery & Therapeutics, Drug Delivery	https://www.scopus.com/authid/detail.uri?authorId=18437170100
4.	 Dr. Satya Eswari Jujjavarapu (Associate Professor) Satyaeswarij.bt@nitrr.ac.in	Process modeling and simulation, Homology modelling, Drug design, Fermentation Technology, Fluid mechanics, Heat and Mass transfer, Bioreactor design, Metabolic flux analysis, Downstream processing	https://scholar.google.com/citations?user=QIydKsMAAAAJ&hl=en
5.	 Dr. D. Vasanth (Associate Professor) dvasanth.bt@nitrr.ac.in	Bio process Engineering, Environmental Biotechnology, Biocatalyst & Bio-products	https://www.scopus.com/authid/detail.uri?authorId=38863136300

6	 Dr. Dijendra Nath Roy (Assistant Professor) dnroy.bt@nitrr.ac.in	Medical Biotechnology, Microbiology, Drug development, Animal Model Experiment	https://scholar.google.com/citations?user=jGuZfcsAAAAJ&hl=en
7	 Dr. Chinmaya Mahapatra (Assistant Professor) cmahapatra.bt@nitrr.ac.in	Biomaterials, Tissue Engineering, Nanotherapeutics, Nanoplasmonics, Redox Nanomaterials	https://www.scopus.com/authid/detail.uri?authorId=55605118500
8	 Dr. Sharda Bharti (Assistant Professor) sbharti.bt@nitrr.ac.in	Environmental Biotechnology, Nanobiotechnology, Nano bioremediation, Applied Microbiology, Antimicrobial resistance, Water and Wastewater Treatment	https://www.scopus.com/authid/detail.uri?authorId=57204543508
9	 Dr. Manishekhar Kumar (Assistant Professor) mkumar.bt@nitrr.ac.in	Regenerative Medicine, Wound Healing, Diabetes, Biomaterials, Tissue Engineering, Immunomodulation, Cell & Tissue Reprogramming	https://www.scopus.com/authid/detail.uri?authorId=57637516600

10	 Dr. Kuldeep Mahato (Assistant Professor) kmahato.bt@nitrr.ac.in	Biosensors, Nanobioengineering, Wearable Bioelectronics, Devices for neurodegenerative disorder management, Point of care devices.	https://www.scopus.com/authid/detail.uri?authorId=57191887694

Research Facilities

S.No.	Research & Testing Facility	Key Features of Equipment	Instrument Images
1.	HPLC	Separate the compounds in a chemical mixture, identity of a drug and provide quantitative results and monitor the progress of the therapy of a disease.	
2.	Fluorescence Microscope	To study the properties of organic or inorganic substances, to examine the structural organization, spatial distribution of samples.	
3.	Particle Size Analyzer	Measure particle size and get shape information of Millions of particles	
4.	FTIR	To identify organic, polymeric, and, in some cases, inorganic materials.	

5.	Laboratory Fermenter	Used for the cultivation and control of microorganisms, cell cultures, or other biological substances in laboratory settings.	
6.	Biochemistry Analyzer	To study, analyse, and evaluate the characteristics of different body samples.	
7	Soxhlet	Used for liquid-solid extractions.	
8	Ultra probe sonicator	Ultrasonic probes generate high-frequency vibrations typically in the range of 20 kHz to 100 kHz. These vibrations are used for various purposes such as mixing, dispersing, emulsifying, and degassing. Ultrasonic probes are widely used in sample preparation techniques such as homogenization, extraction, and cell disruption in biological, pharmaceutical, and chemical laboratories. It is widely used for the protein isolation and nanotechnology reserch.	

9	Potentiostat	Potentiostats provide precise control over the voltage applied to the working electrode, allowing to study electrochemical processes at specific potentials. Potentiostats are equipped with high-quality amplifiers that can measure extremely low currents (down to picoampere range), enabling the investigation of electrochemical reactions with high sensitivity. Potentiostats are employed to investigate the kinetics of electrochemical reactions, including electron transfer rates, reaction mechanisms, and reaction intermediates, providing insights into fundamental chemical processes.Potentiostats play a crucial role in the development and characterization of biosensors, enabling the detection of biomolecules such as glucose, DNA, and proteins through electrochemical methods.	
10	NanoDrop Spectrophotometer	Nanodrop spectrophotometers allow measurement of nucleic acid and protein samples in microvolumes (typically 0.5-2 µl), minimizing sample consumption and reducing the need for dilution.Nanodrop spectrophotometers are widely used for quantifying nucleic acids such as DNA and RNA, enabling researchers to determine sample concentration for downstream applications like PCR, sequencing, and cloning. It also used for protein quantification, allowing to determine protein concentration in samples for applications such as enzyme assays, western blotting, and protein expression studies.	
11	Lyophilizer	Lyophilizers are designed to remove moisture from samples by freeze-drying, preserving the sample's structure and integrity. They incorporate a vacuum system to reduce the pressure, enabling sublimation of ice directly from the solid phase to the gas phase without passing through the liquid phase and offer precise temperature control, allowing samples to be frozen and dried under controlled conditions.Used to preserve biological samples, pharmaceuticals, food products, and other heat-sensitive materials by removing moisture.	

12	Elisa reader	ELISA reader is used to accommodate microplates, typically with 96 or 384 wells, allowing for high-throughput analysis of multiple samples simultaneously.They have the ability to select specific wavelengths of light for absorbance or fluorescence measurement, enabling the detection of various types of assays.ELISA readers are widely used in quantitative ELISA assays to measure the concentration of specific analytes (e.g., proteins, antibodies, antigens) in biological samples.They are also utilized in qualitative ELISA assays to detect the presence or absence of specific analytes, such as infectious agents or biomarkers associated with diseases.	
13	UV-Vis spectrophotometer	UV-Visible spectrophotometers cover a wide range of wavelengths, typically from 190 nm to 1100 nm, allowing for the analysis of both UV and visible light-absorbing compounds.UV-Visible spectrophotometers are extensively used for quantitative analysis of compounds in solution, including quantification of nucleic acids, proteins, pharmaceuticals, and environmental pollutants.They are employed in qualitative analysis to identify substances based on their absorption spectra, aiding in compound characterization and purity assessment.	
14	Thermal Cycler	Thermal cyclers offer precise control over temperature cycling, allowing for rapid heating and cooling of samples to specific temperatures required for various steps of the PCR process.Thermal cyclers are primarily used for amplifying specific DNA sequences through the PCR process, enabling the detection and analysis of genetic material in various samples.They are employed in genotyping applications to identify genetic variations, mutations, or polymorphisms in DNA samples, aiding in genetic research, disease diagnostics, and forensic analysis.	

15	Rotary Evaporator	Rotary evaporator consists of a rotating flask that is partially immersed in a heated water bath. The rotation of the flask increases the surface area of the liquid sample exposed to the vacuum, facilitating faster evaporation.Rotary evaporators are commonly used for solvent removal or concentration in chemical synthesis, extraction, and purification processes. They enable the recovery of valuable solvents for reuse and the isolation of concentrated product fractions. it utilized in natural product research and extraction processes to concentrate and isolate bioactive compounds from plant materials, herbal extracts, and other natural sources.	
16	Fast Protein Liquid Chromatography (FPLC)	Fast Protein Liquid Chromatography (FPLC) is a high-resolution, medium-pressure liquid chromatography technique primarily used for separating and purifying proteins, peptides, and other large biomolecules in research and industry. It uses biocompatible, inert materials and precise, automated buffer systems to achieve, for example, high-purity protein isolation for pharmaceutical and structural studies. Key Uses and Applications includes Protein Purification, Analytical Biochemistry, Pharmaceutical Development, Biological Sample Analysis, Nucleic Acid Purification, Industrial Applications.	
17	A2 Class II Biosafety Cabinet	A Class II Type A2 Biosafety Cabinet (BSC) is a ventilated laboratory workspace that provides triple protection personnel, product, and environment by using HEPA-filtered laminar airflow to handle low-to-moderate risk biological agents. It recirculates approximately 70% of the air while exhausting 30% back into the lab, making it ideal for microbiology, cell culture, and pharmaceutical applications. Key Uses and Applications includes Safe handling of bacterial cultures, virus samples, and pathogens, preventing cross-contamination and lab-acquired infections. Maintaining aseptic, ISO Class 3 sterile work zones for delicate cell lines. Used for preparing hazardous drugs, chemotherapy, and sterile medications. Conducting DNA/RNA research and handling modified organisms. Analyzing environmental, food, and water samples for contamination. Use in hospital laboratories for patient sample analysis.	

CHEMICAL ENGINEERING

Head of the Department: **Prof. Bidyut Mazumdar**
Email: hod.che@nitrr.ac.in
Contact: 09826051120

About the Department

The Department of Chemical Engineering was established in 1962 with sanctioned the strength of 40. Present strength in undergraduate course is 79 and in postgraduate in energy and environment engineering is 17. The undergraduate course of chemical engineering has been accredited from 2025 till the date. The department has completed 25 research projects in the last 10 years and has 18 pieces of high-end research equipment.

The department has an average annual publication rate of 33 journal papers and organized conferences, many training and short-term courses. The department has sanctioned strength of 14 faculty members with 04 Professors, 05 Associate Professors and 05 Assistant Professors. Our department is involved in consultancy of environmental audit, certification of pollution control equipment's, audit of fly ash, audit of explosives, wastewater. In this year consultancy work of around 50 lakhs has been undertaken by the department.

Faculty Details

S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 Dr. Bidyut Mazumdar (Professor) bmazumdar.che@nitrr.ac.in	Waste Water Treatment, Bioprocess Engineering, Chemical Sensors, Food Technology, Catalysis, Environmental Biotechnology, Mass transfer, Bio energy.	https://www.scopus.com/authid/detail.uri?authorId=55625609200

2.	 Dr. P.K. Chaudhari (Professor) pkchaudhari.che@nitrr.ac.in	Process Design, Reaction Engineering, Wastewater Treatment, Bio- energy, Solid waste management, Catalysis Membrane Separation.	https://www.scopus.com/authid/detail.uri?authorId=8691977300
3.	 Dr. A.K. Poonia (Professor) akpoonia.che@nitrr.ac.in	Heat Transfer and Petroleum Refining	https://www.scopus.com/authid/detail.uri?authorId=57192153497
4.	 Dr. Amit Keshav (Professor) akeshav.che@nitrr.ac.in	Membranes, Reactive Separation, CFD, Food Science, Biodegradable, Polymers, Catalysis	https://www.scopus.com/authid/detail.uri?authorId=24280399200
5.	 Dr. Dharm Pal (Associate Professor) dpsingh.che@nitrr.ac.in	Polymer nanocomposite (Bio-nano composite, Functional nanomaterials, Electrodes for rechargeable batteries) Reactive Extraction Wastewater Treatment (Electrocoagulation, Nano-photocatalysis) Bio Resource Technology & Alternate Energy (Pyrolysis, Bio-fuel)	https://www.scopus.com/authid/detail.uri?authorId=56365901900

6.	 Dr. Prabir Ghosh (Associate Professor) prabirg.che@nitrr.ac.in	Advanced Oxidation Processes (AOPs) for removal of persistent organic pollutants, Industrial Waste Water Treatment Methods.	https://scholar.google.co.in/citations?user=ntWJldUAAAAJ&hl=en
7.	 Dr. J. Anandkumar (Associate Professor) anandj.che@nitrr.ac.in	Membrane Separation Process, Microbial Degradation of Waste Materials and Micro Plastics , Co2 Separation, Nanocomposite, Materials, Adsorption Recovery of Critical and Rare Earth Materials	https://www.scopus.com/authid/detail.uri?authorId=35067920600
8.	 Dr. R. Manivannan (Associate Professor) rmani.che@nitrr.ac.in	Microelectronic Fabrication (CMP), Nanotechnology, Electrochemistry Corrosion Science and Engineering, Energy Engineering	https://www.scopus.com/authid/detail.uri?authorId=55916968500
9.	 Dr. (Mrs.) S. Noyel Victoria (Associate Professor) snvictoria.che@nitrr.ac.in	Electrochemistry, Solar Cell Material, Nanotechnology	https://www.scopus.com/authid/detail.uri?authorId=36444548500

10.	 Dr. C. Thakur (Associate Professor) cthakur.che@nitrr.ac.in	Environmental Engineering, Industrial Pollution Abatement, Adsorption, Catalysis.	https://www.scopus.com/authid/detail.uri?authorId=25648521900
11.	 Dr. Mahendra S. Gaikwad (Assistant Professor) msgaikwad.che@nitrr.ac.in	Environmental Engineering, Capacitive Deionization, Membrane Separation, Advance wastewater Treatments, Nanomaterials	https://www.scopus.com/authid/detail.uri?authorId=55602381700
12.	 Dr. Rahul Saha (Assistant Professor) rsaha.che@nitrr.ac.in	Colloidal and Interface Science, Nanotechnology, Enhanced Oil Recovery, Flow in porous media, Rheology, Adsorption	https://www.scopus.com/authid/detail.uri?authorId=56196210400
13.	 Dr. Arghya Datta (Assistant Professor) adatta.che@nitrr.ac.in	Thermochemical conversion of biomass to bioenergy and Techno-economic analysis Biomass characterization Residence time distribution studies Reactive Extraction, wastewater treatment, ash valorization	https://www.scopus.com/authid/detail.uri?authorId=57198570287

14.	 Dr. Chandradhwaj Nayak (Assistant Professor) cnayak.che@nitrr.ac.in	Waste Water Treatment (Adsorption & Neno filtration) Mineral Beneficiation Pulsating Drying	https://www.scopus.com/authid/detail.uri?authorId=57659199200

Research Facilities

S.No.	Research &TestingFacility	Key Features of Equipment	Equipment Image
1.	UV-visible spectrophotometer	Quantifies the concentration of a solute in a liquid sample from its absorbance values at peak wavelengths	
2.	Gas Chromatography	Separating and analysing compounds that can be vaporized without decomposition. It is one of the popular chromatography techniques to separate volatile compounds or substances and in quality control.	
3	Electrochemical Workstation	Used to measure the corrosion potential and corrosion current etc., of a metal sample.	

4	Particle & Zeta Potential Analyzer	Ability to measure the characteristics viz., particle size, surface charge of particles in a liquid medium using Dynamic Light Scattering technique and electrophoretic light scattering.	
5	Contact Angle Analyzer	Used to measure the contact angle of a droplet on a surface and measure the wettability of a solid by a liquid.	
6	Fourier Transform Infrared (FTIR) Spectroscopy	Identifies chemical bonds in a molecule by producing an infrared absorption spectrum.	
7	Rheometer	Measures the stress strain relationship to understand the flow/deformation properties of a material	
8	Flame Photometer	Determines concentration of certain metal ions such as sodium, potassium, lithium, and calcium in a sample.	

9	Thermogravimetric Analyzer (TGA)	Measures changes in the mass of the sample as a function of temperature and/or time, providing information on composition, kinetic analysis of thermal decomposition, etc.	
10	HPLC	Separates the constituents of a compound, tells how much of each compound is present in the mixture.	
11	GC-MS	Quantitative and qualitative measurement of substance present in trace amount. Used for separation of volatile/ semi-volatile components in mixture and in drug detection, environmental analysis, explosives investigation, food and flavour analysis, and identification of unknown samples.	
12	TOC Analyzer	Measures the amount of organic, inorganic, or total carbon in water/soil samples	

13	Ion-Chromatography	Separation and analysis of both anions and cations in environmental samples	
14	BET Surface Area Analyzer	Calculates the specific surface area of solid materials based on gas adsorption measurements	
15	Atomic Absorption Spectroscopy	Determines how much of certain elements are in a sample using the principle that atoms (and ions) can absorb light at a specific, unique wavelength	
16	Texture Analyzer	For Physical and Mechanicals properties (Hardness, Adhesiveness, chewiness springiness.	

****The details of testing and consultancy charges can be obtained from the following link:***

- https://www.nitrr.ac.in/aboutchemical.php
- Contact Head of the Department of Chemical Engineering for further information.

CHEMISTRY

Head of the Department	:	**Dr. S. P. Mahapatra**
Email	:	**hod.chy@nitrr.ac.in**
Contact	:	**8249897499**

About the Department

Department of Chemistry was established in 1956. Department supports Chemistry courses (Applied Chemistry and Environment and Ecology) of the B.Tech. programs and conducting Masters and Doctoral program as well. Department facilitates chemistry related courses for the B.Tech. programs, whereas Ph.D. program was introduced in 2012. Postgraduate program (M.Sc. in Chemistry) was started in 2022. Fifteen research projects have been completed and two research projects are currently ongoing. The department has published more than 200 research papers in various journals, conferences, and book chapters. Around 10 workshops, training programmes and conferences has also been organized by the department.

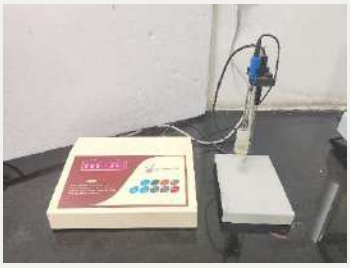
Faculty Details

S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 Dr. (Mrs.) Kavita Tapadia (Professor) ktapadia.chy@nitrr.ac.in	Environmental Analytical Chemistry, Nanoparticles, Green Chemistry, Pharmacokinetic, Study of Drug and Drug Analysis, Microextraction techniques.	https://scholar.google.com/citations?user=oFNbldcAAAAJ&hl=en
2.	 Dr. S. P. Mahapatra (Professor) spmahapatra.chy@nitrr.ac.in	Major: Synthesis and Characterization of Nanomaterials, Development of Polymer Composite, Microcellular Composite & Nanocomposite. Minor: Environmental Chemistry.	https://scholar.google.co.in/citations?user=DF9KmwUAAAAJ&hl=en

3.	 Dr. (Mrs.) Tungabidya Maharana (Associate Professor) tmaharana.chy@nitrr.ac.in	Conducting Polymer Composites for Supercapacitor Application; Organic-Inorganic hybrids; Polymer synthesis; Biodegradable polymers; Development of novel biocompatible and bioassimilable metal complexes for Ring Opening Polymerization (ROP) of cyclic esters, Polymers as intelligent and smart material; Catalysis.	https://www.scopus.com/authid/detail.uri?authorId=16837177400
4.	 Dr. Kafeel Ahmad Siddiqui (Associate Professor) kasiddiqui.chy@nitrr.ac.in	Crystal Engineering; Coordination Polymers and Metal-Organic Frameworks; Composite@CP/MOF their Energy Storage and Environmental Applications.	https://scholar.google.com/citations?user=-w1oW6oAAAAJ&hl=en
5.	 Dr. Alekha Kumar Sutar (Associate Professor) aksutar.chy@nitrr.ac.in	Catalysis Engineering, Engineering/Materials Science, High Performance Polymer based Nanocomposites, Ring Opening Polymerization, CO2 Sequestration, Polymer Composites for Supercapacitor Application.	https://scholar.google.com/citations?user=7zlfFzoAAAAJ&hl=en&oi=ao
6.	 Dr. (Mrs.) Sagarika Bhattacharya (Assistant Professor) sbhattacharya.chy@nitrr.ac.in	Carbon dots, soft nanocomposites, biosensing, metal complexes, supramolecular chemistry, Lanthanide metal-ligand complexes.	https://www.scopus.com/authid/detail.uri?authorId=56894642400

7.	 Dr. Atanu Ghosh (Assistant Professor) aghosh.chy@nitrr.ac.in	Metal Nanoclusters, Photoredox catalysis, Heterogeneous catalysis, Mass Spectrometry, Sensing of heavy metal contamination in drinking water.	https://scholar.google.com/citations?user=ugvkyxEAAAAJ&hl=en
8.	 Dr. Anil A. Assistant Professor aanil.chy@nitrr.ac.in	Structure-Property correlations in Ferroelectric, Relaxor ferroelectric and Antiferroelectric oxides • Piezoelectric Sensors, Actuators and Transducers • Dielectric Materials for Energy Storage and Pyroelectric Applications	https://www.scopus.com/authid/detail.uri?authorId=58140478500

Research Facilities

S.No.	Research & Testing Facility	Key Features of Equipment	Equipment Image
1	pH Meter	To measure hydrogen ion concentration in solution.	
2	Conductivity Meter	To measure the level of conductivity in solution.	
3	Flame Photo Meter	To determine the conc. of certain metal ions viz. Na, K, Ca.	

4.	D.O Meter	To measure the amount the gaseous oxygen dissolved in a water sample.	
5.	Determination of Turbidity	Nephelometric method compares how light is scattered in a water sample against the amount of light scattered in a reference solution and gives the turbidity value.	
6.	Determination of absorption by UV-Visible Spectrophotometer	To measure the absorption or transmition of light that passes through sample.	
7.	LCR Meter	To measure the capacitance, and impedance spectra of materials and components at different frequencies.	
8.	Redwood Viscometer	To determine of redwood viscosity and which can be converted to kinematic viscosity.	

9.	Rheometer	To measure the stress-strain relationship to understand the flow/deformation properties of solid polymer material.	
10.	Determination of Gross Calorific Value by Bomb Calorimeter	To represent the heat produced by a unit weight of coal sample when completely oxidized.	
11.	Fractional Distillation Unit	Purification of water as well as for separating ethanol and water	
12.	Fluorescence Spectrophotometer	To Analyse fluorescence spectra of molecule based on its fluorescent properties.	
13.	Potentiostat - Galvanostat	Electrochemical measurements and applications such as corrosion, coatings, batteries, and general electrochemistry.	

14	FTIR Spectrophotometer	To identify, quantify and characterize organic and inorganic sample.	
15	Universal Testing Machine	To measure the Tensile properties of polymer samples and composites.	

The details of testing and consultancy charges can be obtained from the office of Head of the Department of Chemistry.

CIVIL ENGINEERING

Head of the Department: Dr. Laxmikant Yadu
Email: hod.ce@nitrr.ac.in
Contact: 9425216529

About the Department

The Department has established Memoranda of Understanding (MoUs) with leading national and international institutions, including the National Highway Authority of India, Vali-e-Asr University of Rafsanjan (Iran), National Ilan University (Taiwan), Changzhou Institute of Technology (China), and the National Institute of Hydrology, Roorkee. The Department also collaborates with the United Nations International Children's Emergency Fund, Central Road Research Institute, National Industrial Research and Development Agency, Rajiv Gandhi National Ground Water Training & Research Institute, and Unmanned Warriors for research, training, and technology-driven initiatives in the domains of infrastructure, water resources, and emerging technologies such as drone-based solutions.

The Department serves as the State Technical Agency for several flagship Central Government programmes, including Pradhan Mantri Gram Sadak Yojana (since 2000) and the National Rural Drinking Water Programme (since 2014). It also functions as the Nodal Agency for the National Water Mission, Government of India, and has been responsible for preparing the State Specific Action Plan (SSAP) since 2017.

The faculty members of the Department have demonstrated strong research and innovation output, with 12 patents published and 8 patents granted. The Department provides testing, consultancy, and advisory services with an average annual of ₹2.53 Crores (three-year average) to a wide range of public and private sector organizations, including Steel Authority of India Limited, Bharat Sanchar Nigam Limited, National Mineral Development Corporation, National Thermal Power Corporation, Rail Vikas Nigam Limited, Indian Railways, South Eastern Coalfields Limited, Bharat Aluminium Company, Bhilai Steel Plant, Airports Authority of India, National Highway Authority of India, Chhattisgarh Electricity Regulatory Commission, Chhattisgarh State Electricity Board, Chhattisgarh Environment Conservation Board, Public Works Department, Chhattisgarh Rural Road Development Agency, Chhattisgarh Infrastructure Development Corporation Limited, Larsen & Toubro, and ACC Limited.

The Department's core research funding areas include Water Resources and Management, Land Subsidence, Concrete Materials, Pavement Performance, Pavement Materials, and the use of marginal and industrial waste materials such as fly ash, steel slag, and ground granulated blast furnace slag (GGBFS). The Department has received research funding from major national and international agencies, including the National River Conservation Directorate, Ministry of Jal Shakti, Ministry of Environment, Forest and Climate Change, National Rural Road Development Agency, Ministry of Rural Development, Housing and Urban Development Corporation, United Nations International Children's Emergency Fund, and the Chhattisgarh Council of Science and Technology. The total sanctioned and ongoing project cost is approximately ₹14 Crores.

Faculty Details			
S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 Dr. N.V. Ramana Rao (Director & Professor) director@nitrr.ac.in	Structural Engineering Concrete Technology High volume fly ash concrete Fly ash & Marginal Materials Fibre reinforced concrete	https://scholar.google.com/citations?user=EwU56hcAAAAJ&hl=en
2.	 Dr. M.K. Verma (Professor) mkv.civil@nitrr.ac.in	Water Resources Engg / Fluid Mechanics, Hydrology, Water Resources Engg	https://scholar.google.co.in/citations?user=KdB5UtwAAAJ&hl=en
3.	 Dr. R.K. Tripathi (Professor) rktripathi.ce@nitrr.ac.in	Structural Engineering /Structural Engg., Non- linear Analysis, Finite Element Analysis, Earthquake Engineering, Soil-Structure interaction, Transportation systems, Rural Roads.	https://scholar.google.com/citations?user=AIUUFjMAAAAJ&hl=en
4	 Dr. Samir Bajpai (Professor) sb@nitrr.ac.in	Environmental Engineering/ Water, Wastewater Treatment, Environmental Management, Air pollution Monitoring & Modelling. Solid Waste Management.	https://scholar.google.co.in/citations?user=3oo1L7MAAAAJ&hl=en

5.	 Dr. U.K. Dewangan (Professor) ukdewangan.ce@nitrr.ac.in	Structural Engg / Structural Engg. Finite Element, Inverse problem, System Identification, Structural Health Monitoring, Damage Detection, Computational Mechanics	https://scholar.google.co.in/citations?user=qOieQpAAAAAJ&hl=en
6.	 Dr. G.D. Ramtekkar (Professor) gdramtekkar.ce@nitrr.ac.in	Structural Engg / Mechanics of Solids, Mechanics of Composite Materials, Finite Element Modelling, Earthquake Engineering	https://scholar.google.co.in/citations?user=dIqL_IwAAAAJ&hl=en
7.	 Dr. Shirish V. Deo (Professor) svdeo.ce@nitrr.ac.in	Structural Engineering, Concrete Technology, Use of marginal materials and admixtures in concrete, Sustainable Concrete,	https://scholar.google.com/citations?user=g818-NoAAAAJ&hl=en
8.	 Dr. L.K Yadu (Professor) lkyadu.ce@nitrr.ac.in	Geotechnical Engineering, Soil structure interaction, Rock Engg, Slope stability foundation Pavement materials	https://scholar.google.com/citations?hl=en&user=8MCagSYAAAAJ
9.	 Dr. Ajay Vikram Ahirwar (Associate Professor) avahirwar.ce@nitrr.ac.in	Waste Treatment. Environmental Engineering / Air Pollution Monitoring, Solid Waste Management, Water / Wastewater Treatment, Industrial	https://scholar.google.co.in/citations?user=X3JtRuQAAAAJ&hl=en

10.	 Dr. Ishtiyaq Ahmad (Associate Professor) iahmad.ce@nitrr.ac.in	Water Resources Development & Irrigation Engg/ Stochastic Hydrology, Surface Water Resources Application of Remote Sensing & GIS in Water resources, Rainfall – Runoff Modelling	https://www.scopus.com/authid/detail.uri?authorId=57188828406
11.	 Dr. Mohit Jaiswal (Assistant Professor) mjaiswal.ce@nitrr.ac.in	Structural Engineering, Finite Element Modeling Structural Rehabilitation, Application of Composites in Structures.	https://nitrr.irins.org/profile/112738
12.	 Dr. Mani Kant Verma (Associate Professor) manikverma.ce@nitrr.ac.in	Climate Change Stochastic Hydrology Urban Hydrology, Fluid Mechanics, Optimization techniques, Infrastructure Asset Management of an Urban Water Distribution System.	https://scholar.google.co.in/citations?user=Hf0jmxwAAAAJ&hl=en
13.	 Dr. Meena Murmu (Associate Professor) mmurmu.ce@nitrr.ac.in	Structural Engineering, Concrete Technology, Use of concrete additives and admixtures in concrete, Sustainable Concrete,	https://www.scopus.com/authid/detail.uri?authorId=56619060700
14.	 Dr. Govardhan Bhat (Associate Professor) gov.ce@nitrr.ac.in	Structural Engineering Structural Dynamics seismic Base Isolation Geotechnical Earthquake Engineering Earthquake protection of Buildings Structural Analysis of Buildings	https://scholar.google.co.in/citations?user=tDlUr30AAAAJ&hl=en

15.	 Dr. Sunny Deol G (Associate Professor) sdguzzarlapudi.ce@nitrr.ac.in	Pavement systems modelling Evaluation of pavement systems Modelling of pavement materials Maintenance and rehabilitation of pavement Transport econometric modelling Regional transportation demand modelling Freight transport modelling	https://scholar.google.co.in/citations?hl=en&user=ye7e3sAAAAAJ
16.	 Dr. A. D. Prasad (Associate Professor) adprasad.ce@nitrr.ac.in	• Geomatics Engineering • Energy / Renewable Energy • RS & GIS Applications • Water Resources Engineering • Environmental Engineering • Image Processing / Medical Image Processing	https://scholar.google.co.in/citations?user=lz94iC0AAAAJ&hl=en
17.	 Dr. Sandeep Kumar Chouksey (Assistant Professor) schouksey.ce@nitrr.ac.in	Geotechnical Engineering, Geo-environmental Engineering, Solid Waste Management, Ground Improvement Techniques, Constitutive Modelling	https://scholar.google.com/citations?hl=en&user=LouVt5AAAAAJ
18.	 Dr. Alfia Bano (Associate Professor) alfia.ce@nitrr.ac.in	Structural Engineering/ Structural Analysis, Composite Materials, Stability of Structures, Finite Element Analysis, Earthquake Engineering	https://scholar.google.co.in/citations?user=NIdmKmkAAAAJ&hl=en
19.	 Dr. Vikas Kumar Vidyarthi (Associate Professor) vkvidyarthi.ce@nitrr.ac.in	Hydraulics and Water Resources Engineering Hydro informatics Prediction and Forecasting Climate Change, Development and design of flow measurement Instruments Instrumentation and Control in Hydraulics, Smart Irrigation system design and development Data analytics and Machine learning in water resources	https://www.scopus.com/authid/detail.uri?authorId=57215547088

		Engineering	
20.	 Dr. Chandan Kumar Singh (Assistant Professor) cksingh.ce@nitrr.ac.in	Application of geo-informatics in groundwater management Watershed and regional scale hydrologic modeling Climate change impact and adaptation Water resource management Analysis and design of Irrigation system	https://scholar.google.com/citations?user=uLBk10oAAAAJ&hl=en
21	 Dr. Ritesh S. Ingale (Assistant Professor) ringale.ce@nitrr.ac.in	Geotechnical Engineering, Soil Dynamics, Characterisation of Geomaterials, Application of Sensors in Experimental Geotechnics, Soil Stabilisation	https://scholar.google.com/citations?user=lEULky8AAAAJ&hl=en
22	 Dr. Atin Roy (Assistant Professor) aroy.ce@nitrr.ac.in	Reliability Analysis of Structures Metamodeling Approach.	https://scholar.google.com/citations?user=LGDm5hwAAAAJ&hl=en

Research Facilities			
S.No.	**Research & Testing Facility**	**Key Features of Equipment**	**Equipment Image**
1	Falling Weight Deflectometer for Pavement Evaluation	Pavement deflections, stiffness modulus and layer modulus values for Heavy traffic roads like Expressways and Highways.	
2	Light Weight Deflectometer for Pavement Evaluation (Low volume)	Pavement deflections, stiffness modulus and layer modulus values for Low traffic roads like Village roads.	
3	Engineering Seismograph: Multichannel Analysis of Surface Waves (MASW): 24 channel	Stiffness characteristics and seismic exploration of ground upto to depth of 30meters	
4.	Cyclic Triaxial Test with resilient modulus for soil and granular materials	Resilient modulus of soil and granular materials, Shear strength of soils under cyclic loading	 
5.	Universal Testing Machine for Geo-Grids	Tensile strength of geogrids	

6	Concrete Rheometer	Flow (rheological) properties of fresh concrete: yield stress and plastic viscosity Parameters	
7	Corrosion Analyser	Corrosion rate of reinforcement in concrete	
8	Crack scope	Crack properties of concrete	
9	Carbonation Chamber	Concrete's resistance behavior to carbonic acid penetration.	
10	Atomic Absorption spectrophotometer	Elemental Analysis (Heavy and Light)	

11	Bomb Calorimeter	Calorific value analysis of all substances	
12	UV Spectrophotometer	Elemental Analysis	
13	Athelometer&OCanalyzer	Aerosols ResearchBlack, Organic & elemental carbon monitoring	
14	Differential Global Positioning System (DGPS)	Highly accurate known position with GPS accuracy to about 10 cm	
15	Unmanned Ariel Vehicle (Drone X)	Data collection of inaccessible locations like Hilly terrains, Urban Traffic data, Alignment surveys of Railways and Roads	

Computational Facilities

- **Structural Engineering:**
  Bentley Complete campus license, ANSYS Civil FEM research version 12.2, SAP 2000 Advanced V-15, CSI BRIDGE Advance, STAAD Pro & STAAD Foundation, Bentley LEAP Bridge, ADAPT Software, FEAST Software, and NISA.

- **Water Resources Engineering:**
  Arc GIS, ERDAS IMAGINE, GEO MEDIA, VISUAL MODFLOW, WATER CAD, STORM CAD, SEWER CAD, Surface water modelling system (SMS), Water shed modelling system (WMS), Water GEMS and Sewer GEMS.

- **Environmental Engineering:**
  Life cycle Assessment, and GaBi software

- **Geotechnical Engineering:**
  Plaxis 2D, Slope W, GeoStudio

- **Transportation Engineering:** IITPAVE, KENPAVE, Mx Road and Mx Rail

*****The details of testing and consultancy charges can be obtained from the office of Head of the Department of Civil Engineering.***

COMPUTER APPLICATIONS

Head of the Department: Dr. Tripti Swarnkar
Email: hod.mca@nitrr.ac.in
Contact: 9437130794

About the Department

The Department of Computer Applications was established in 1986 at the erstwhile Government Engineering College, Raipur, with an intake of 30 students. Later, in 2000, after the formation of the state of Chhattisgarh, the intake was increased to 60. The current intake is 110. In 2005, with the Institute's upgradation, the Department is now known as the Department of Computer Applications (CA), National Institute of Technology Raipur. Admission to the MCA program is through the national level entrance examination, i.e., NIMCET (National Institutes Master of Computer Applications Entrance Test), conducted by one of the participating NITs. Presently, there are 11 participating NITs in this entrance test. This provides an opportunity for all the participants in India to join the MCA Program.

In 2011, the Department began the Ph.D. program in Computer Applications. The Department is rich in terms of faculty, laboratory/classroom facility and campus placement. The Department of Computer Applications encompasses a diverse range of cutting-edge research endeavors aimed at advancing knowledge and innovation in the field. Within the department, faculty and researchers investigate various areas such as AI, ML, Data Science, Cyber Security, Internet of Things, Cryptography, Heuristic, and Metaheuristic techniques for combinatorial optimization problems. Research projects within the department span fundamental theoretical investigations to applied research with practical implications. The faculty of the department has published more than 200 SCI/SCOPUS journals and brought several diverse projects amounting toapprox. Rs. 186 lacs. Through its research, the department strives to make significant contributions to the field of computer science, driving advancements that could shape the future of technology and society.

Faculty Details

S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 Dr. Mithilesh Atulkar (Professor) matulkar.mca@nitrr.ac.in	Computer system architecture, Parallel processing, AI and ML, Software Defined Networking.	https://www.scopus.com/authid/detail.uri?authorId=57205388673

2.	 Dr. Priyanka Tripathi (Professor) ptripathi.mca@nitrr.ac.in	Cloud Computing, Internet of Things, Web Engineering.	https://scholar.google.com/citations?user=OgknBUgAAAAJ&hl=en&oi=hraa
3.	 Dr. Tripti Swarnkar (Professor) tswarnkar.mca@nitrr.ac.in	Machine Learning, Deep Learning, Medical Omics Data and Image Data Analysis	https://scholar.google.com/citations?user=CS-_Vb0AAAAJ&hl=en
4.	 Dr. Manju Pandey (Associate Professor) mpandey.mca@nitrr.ac.in	Internet of Things, Cloud Computing, Decision Support System	https://www.scopus.com/authid/detail.uri?authorId=36104481400
5.	 Dr. Mou Dasgupta (Associate Professor) mdasgupta.mca@nitrr.ac.in	Information Security, IoT Security, WSN	https://www.scopus.com/authid/detail.uri?authorId=36069016500
6.	 Dr. Shyam Sundar (Associate Professor) ssundar.mca@nitrr.ac.in	Heuristic and Metaheuristic techniques for NP-Hard Combinatorial Optimization Problems	https://www.scopus.com/authid/detail.uri?authorId=56243911300

7.	 Dr. Tanmoy Kanti Das (Associate Professor) tkdas.mca@nitrr.ac.in	Security of Cyber Physical Systems, Automotive Cyber Security, Adversarial Machine Learning, Information Security, Multimedia Forensics, Data Analytics.	https://scholar.google.co.in/citations?hl=en&user=qGt262IAAAAJ&view_op=list_works&sortby=pubdate
8.	 Dr. Dibakar Saha (Assistant Professor) dsaha.mca@nitrr.ac.in	Wireless Sensor Networks, Parallel and Distributed Computing, UAV Surveillance	https://www.scopus.com/authid/detail.uri?authorId=57212047690
9.	 Dr. Naeem Ahmad (Assistant Professor) nahmad.mca@nitrr.ac.in	Wireless Networks, Deep Learning.	https://www.scopus.com/authid/detail.uri?authorId=7202343939
10.	 Dr. Tapan Kumar Sahoo (Assistant Professor) tksahoo.ca@nitrr.ac.in	Pattern Recognition, Machine Learning & Deep Learning, Soft Computing, Image Processing, Dimensionality Reduction (PCA Variants), Spectroscopic Signal Analysis (LIBS), Biomedical Signal Processing (EEG), QSAR Modeling & Drug Discovery	0000-0002-5838-0742
11.	 Dr. Sharbani Purkayastha (Assistant Professor) spurkayastha.mca@nitrr.ac.in	Electronic Design Automation, Machine learning, Cyber Security	https://scholar.google.com/citations?user=cNRkl0EAAAAJ&hl=en

Former faculty

S.No	Name of faculty	Key Research Areas	Research Link
1.	 (Late.) Harendra Bikrol (Associate Professor) hbikrol.mca@nitrr.ac.in	Computer Networks, Software Engineering, Operating Systems	https://www.scopus.com/authid/detail.uri?authorId=57192542796

The details of testing/consultancy charges can be obtained from the office of Head of the Department of Computer Applications.

COMPUTER SCIENCE & ENGINEERING

Head of the Department: Dr. Dilip Singh Sisodia
Email: hod.cse@nitrr.ac.in
Contact: 08462808174

About the Department

The Department of Computer Science and Engineering was established in 2000 with the vision of promoting excellence in computer science education, advanced research, and technological innovation. With its cohesive team of 16 faculty members, it offers degrees at various levels, namely B.Tech. and Ph.D. Being a part of a premier institute, the faculty members and students of the department perform research in almost all the thrust areas, and the department also ensures quality research at all the levels of the offered programmes.

The department currently has an undergraduate intake of 114 students and offers a doctoral (Ph.D.) program. So far, 45 PhD scholars have graduated, while 69 research scholars (full-time and part-time) are currently pursuing their doctoral research.

The Department of Computer Science and Engineering is committed to advancing knowledge and innovation in computing technologies through high-quality research and interdisciplinary collaboration. The department focuses on addressing contemporary technological challenges and developing intelligent systems that contribute to scientific advancement, industrial growth, and societal impact.

The department actively promotes a strong research culture among faculty members, research scholars, and students. Through funded projects, publications, and industry partnerships, the department aims to create impactful research outcomes in emerging areas of computer science and engineering.

At present, the department is supervising research projects worth more than ₹400 lakh. Faculty members and research scholars have collectively published over 500 research papers in reputed international journals, conferences, and book chapters.

The department has an excellent placement record, with students securing positions in leading national and international companies, with an average package of around ₹18.97 lakh per annum, and highest package of **₹60 lakh in 2024-2025**. Many graduates of the Ph.D. program have obtained faculty positions in reputed universities and are contributing significantly in academic institutions and industrial research laboratories.

Over the years, the department has organized several prestigious national and international conferences, workshops, and faculty development programs, contributing to the dissemination of knowledge and collaboration within the research community.

Notably, two faculty members from the department have been consistently recognized among the Top 2% Scientists in the World in the Stanford University global ranking for the years 2023, 2024, and 2025.

The department is supported by state-of-the-art infrastructure, including high-end GPUs, IoT devices, and advanced computing facilities, enabling researchers and students to work on cutting-edge technologies and innovative research projects.

Faculty Details:

Faculty Details			
S. No.	**Name of the Faculty**	**Key Research Areas**	**Research Link**
1	 Dr. Dilip Singh Sisodia (Professor) dssisodia.cs@nitrr.ac.in	Artificial Intelligence, Machine Learning, Soft Computing, Recommender Systems, Fraud/Anomaly Detection, Image/Signal Processing	https://www.scopus.com/authid/detail.uri?authorId=52264552800
2	 Dr. N. K. Nagwani (Professor) nknagwani.cs@nitrr.ac.in	Data Mining, Graph Mining, Fuzzy Logic, Text Mining, NLP, Software Engineering, Object Oriented Methodologies, Quantum Computing & Quantum Machine Learning.	https://www.scopus.com/authid/detail.uri?authorId=26639544200
3	 Dr. Pradeep Singh (Professor) psingh.cs@nitrr.ac.in	Artificial Intelligence, Machine Learning, Deep Learning, Software Defect Prediction, Evolutionary Computing, Healthcare & Bioinformatics, Cybersecurity, Software Engineering, Database Systems, Evolutionary Computing, Reinforcement learning, Agentic AI and Responsible AI	https://www.scopus.com/authid/detail.uri?authorId=55568517785
4.	 Dr. Aakanksha Sharaff (Associate Professor) asharaff.cs@nitrr.ac.in	Data Science, Sentiment Analysis, Cyber Security, Smart Agriculture	https://www.scopus.com/authid/detail.uri?authorId=57120176100

5.	 Dr. Preeti Chandrakar (Associate Professor) pchandrakar.cs@nitrr.ac.in	Blockchain, Authentication, Information Security, Cloud Computing, Wireless Sensor Network Security	https://www.scopus.com/authid/detail.uri?authorId=57188739692#tab=grants
6.	 Dr. K. Jairam Naik (Associate Professor) jnaik.cse@nitrr.ac.in	Distributed & Cloud Computing, Fog-Edge, IoT Computing & Communication, Computational Intelligence	https://scholar.google.com/citations?hl=en&user=yyE-OBwAAAAJ https://www.scopus.com/authid/detail.uri?authorId=58921910000
7.	 Dr. Deepak Singh (Assistant Professor) dsingh.cs@nitrr.ac.in	Domain Adaptation, Dataset Shift, Evolutionary Computation, Machine Learning.	https://scholar.google.com/citations?hl=en&user=2HsF-ogAAAAJ
8.	 Dr. Sonal Yadav (Assistant Professor) syadav.cse@nitrr.ac.in	High Performance Computing, Computer Arithmetic, Networks-on-Chip, GPGPU, NPU, FPGA, Hardware Accelerators, Parallel Computing, Computer Architecture, Compiler Design, AI/ML, Computer Vision	https://scholar.google.com/citations?user=NKe86HMAAAAJ&hl=en https://www.scopus.com/authid/detail.uri?authorId=55994913300

9.	 Dr. Jitendra Kumar Rout (Associate Professor) jkrout.cs@nitrr.ac.in	NLP, AI and Machine Learning, Information Security, IoT, Theoretical Computer Science	https://scholar.google.com/citations?hl=en&user=kWDOTCUAAAAJ
10.	 Dr. Karnati Mohan (Assistant Professor) kmohan.cse@nitrr.ac.in	Affect Recognition, Brain-Computer Interface, Computer Vision, Biomedical Signal Processing.	https://scholar.google.com/citations?hl=en&user=BSTidncAAAAJ https://www.scopus.com/authid/detail.uri?authorId=57224313309
11.	 Dr. Nitesh K Bharadwaj (Assistant Professor) nkbharadwaj.cse@nitrr.ac.in	Digital Forensics, Cyber Security, VLSI Design, Internet of Things, Storage Drive Forensics.	https://scholar.google.com/citations?hl=en&user=NKsJNB8AAAAJ
12.	 Dr. Shailendra Kumar Tripathi (Assistant Professor) Email ID: sktripathi.cse@nitrr.ac.in	Cryptography, Visual Cryptography, Secret Image Sharing, Steganography, Multi-media Security and Digital Image Processing.	https://scholar.google.com/citations?hl=en&user=G7Qv_ekAAAAJ
13	 Dr. Bunil Kumar Balabantaray (Assistant Professor) Email ID: bkbalabantaray.cse@nitrr.ac.in	Biomedical Image Processing, Healthcare Automation, Computer Vision, Quantum Computing, Robotics, and Digital Heritage	https://scholar.google.com/citations?user=r_LyAt4AAAAJ&hl=en https://www.scopus.com/authid/detail.uri?authorId=56178407400 https://orcid.org/my-orcid?orcid=0000-0002-2769-7122 https://dblp.org/pid/181/0338.html

14	 Dr. Madhukrishna Priyadarsini (Assistant Professor) mpriyadarsini.cse@nitrr.ac.in	Software-defined Networks (SDN), Game Theory, Internet of Things (IoT), Cyber-physical Systems (CPS), Cloud Computing, Network Security	Google Scholar: https://rb.gy/vezf01 DBLP: dblp: Madhukrishna Priyadarsini Scopus Author ID: Priyadarsini, Madhukrishna - Author details - Scopus ORCID ID: https://orcid.org/0000-0002-8833-179X
15	 Dr. Anita Murmu (Assistant Professor) amurmu.cse@nitrr.ac.in	Medical Image Processing, Deep Learning, Machine Learning, Security, Artificial Intelligence, Federated Learning	https://scholar.google.com/citations?user=x3xrIJAAAAAJ&hl=en
16	 Dr. Manu Vardhan (Former Faculty) mvardhan.cs@nitrr.ac.in	Distributed System, Security issues in Cloud Computing, Cyber Security, Application of Artificial Intelligence in Cloud Computing Optimization	https://scholar.google.com/citations?user=3WwWPL8AAAAJ&hl=en

Core Research Areas

Major research domains pursued in the department, such as:

- Artificial Intelligence and Machine Learning
- Data Science and Big Data Analytics
- Healthcare Automation
- Computer Vision and Image Processing
- Computer Arithmetic
- Computer Architecture
- Compiler Design
- Digital Heritage
- Quantum Computing
- Natural Language Processing
- Cybersecurity
- Cryptography
- Digital Forensics
- Cloud Computing
- Software-defined Networks (SDN)

- Game Theory
- Cyber-physical Systems (CPS)
- Internet of Things (IoT)
- Network Function Virtualization (NFV)
- Networks on Chip
- Blockchain Technology
- High Performance Computing
- Hardware Accelerators
- Human Computer Interaction
- Privacy in Social Networks
- Smart Agriculture

Research Facility / Laboratory and Major/Minor Equipment Available:

Computing Lab-1

1. Details Of Equipment / Computer System: ACER Veriton PC: - Intel(R) Core(TM) i5- 10900 CPU @ 2.80GHz 2.81 GHz, RAM :- 4.0 GB, Hard Disk : - 500 GB, Network Card : - 10/10/1000 Mbps
   Software Installed: OS Windows 10 Pro, Python, Code Block
   No. of System: 40 Nos
   Projector: 1 Nos
2. Details Of Equipment / Computer System: HP EliteDesk 800 G6 Tower PC: - Intel(R) Core(TM) i9- 10900 CPU @ 2.80GHz 2.81 GHz, RAM :- 32.0 GB, Hard Disk : - 1 TB, Network Card : - 10/10/1000 Mbps
   Software Installed: OS Windows 10 Pro, Python, NetBeans, Code Block
   No. of System: 08 Nos

Computer Lab-2

1. Details Of Equipment / Computer System: HP EliteDesk 800 G6 Tower PC: - Intel(R) Core(TM) i9- 10900 CPU @ 2.80GHz 2.81 GHz, RAM :- 32.0 GB SSD : - 1 TB, Graphics Card:- 4 GB Network Card : - 10/10/1000 Mbps
   Software Installed: OS Windows 11 Pro, Python, Netbean, Code Block
   No. of System: 22 Nos
   Projector: 1 Nos
2. Details Of Equipment / Computer System: Dell OptiPlex 5270 AIO PC: - Intel(R) Core(TM) i5- 9500 CPU @ 3.00GHz 3.00 GHz, RAM :- 16.0 GB, Hard Disk: - 1 TB, Network Card : - 10/10/1000 Mbps
   Software Installed: OS Windows 10 Pro, Python
   No. of System: 18 Nos
3. Details Of Equipment / Computer System: HP EliteDesk 800 PC: - Intel(R) Core(TM) i7- 4770 CPU @ 3.40GHz 3.40 GHz, RAM :- 4.0 GB, Hard Disk: - 500 GB, Network Card : - 10/10/1000 Mbps
   Software Installed: OS Windows 10 Pro, Python
   No. of System: 08 Nos

Research Lab

1. Details Of Equipment / Computer System: Lenovo ThinkStation Intel Xeon Workstation: - Intel(R) Xeon(TM) i5- 10900 CPU @ 2.80GHz 2.81 GHz, RAM :- 32.0 GB, Hard Disk : - 2 TB, Graphics Card :- 16 GB Network Card : - 10/10/1000 Mbps
   Software Installed: OS Windows 10 Pro, Python, Anaconda
   No. of System: 9 Nos
2. Details Of Equipment / Computer System: Tyron Workstation: - Intel(R) Xeon Silver 4210 CPU @ 2.20GHz 2.20 GHz, RAM :- 64.0 GB, Hard Disk : - 2 TB, Graphics Card:- 16 GB Network Card : - 10/10/1000 Mbps
   Software Installed: OS Windows 10 Pro, Python, Anaconda
   No. of System: 1 Nos
3. Details Of Equipment / Computer System: Tyron Workstation: - Intel(R) Xeon(TM) i5- 10900 CPU @ 2.80GHz 2.81 GHz, RAM :- 128.0 GB, Hard Disk : - 4 TB, Graphics Card:- 32 GB , Network Card : - 10/10/1000 Mbps
   Software Installed: OS Windows 10 Pro, Python, Anaconda
   No. of System: 2 Nos
4. Details Of Equipment / Computer System: SuperMicro Fusion Workstation: - Intel(R) Xeon Silver 4210 CPU @ 2.20GHz 2.20 GHz, RAM :- 128.0 GB, Hard Disk : - 4 TB, Graphics Card:- 16 GB Network Card : - 10/10/1000 Mbps
   Software Installed: OS Windows 10 Pro, Python, Anaconda,
   No. of System: 2 Nos
5. Details Of Equipment / Computer System: Dell Inc. PowerEdge R740 Server: - Intel(R) Xeon(R) Silver 4116 CPU @ 2.10GHz 2.10 (2 Processor) GHz, RAM :- 128.0 GB, Hard Disk : - 8 TB , Graphics Card:- 16 GB Network Card : - 10/10/1000 Mbps
   Software Installed: OS Windows server 2019 Standard, Python, Anaconda
   No. of System: 2 Nos

Miscellaneous

Two UG Labs; One Research Labs; Head of Department Office; office with facility, telephone, printer available for students/faculty, Individual faculty Cabin with Computing, Internet, telephone, two class room with LCD projector, computer, Internet connectivity.

Research Project and Publications:

Sl. No.	Name of the Faculty	Numbers of Publications (Only SCI/SCIE/Scopus indexed Journals & Conference Proceedings)			Numbers of Project/Consultancy (Completed/Ongoing)	
		Journals	Conference	Patent (Published or Granted)	Funded Projects	Consultancies
1	Prof. N. K. Nagwani	69	55	01	06	01
2	Dr. Dilip Singh Sisodia	72	64	03	06	02
3	Dr. Pradeep Singh	48	62	0	10	0
4	Dr. Aakanksha Sharaff	35	45	07	03	00
5	Dr. Manu Vardhan	47	55	01	02	
6	Dr. Preeti Chandrakar	30	32	01	02	0

7	Dr. K. Jairam Naik	39	30	02	02	00
8	Dr. Deepak Singh	25	23	02	03	01
9	Dr. Sonal Yadav	9	28	03	01	0
10	Dr. Jitendra Kumar Rout	30	40	01	03	00
11	Dr. Karnati Mohan	20	11	01	02	0
12	Dr. Nitesh K Bharadwaj	03	10	0	02	1
13	Dr. Shailendra Kumar Tripathi	8	7	0	0	0
14	Dr. Bunil Kumar Balabantaray	46	47	3	7	3
15	Dr. Madhukrishna Priyadarsini	10	12	0	0	0
16	Dr. Anita Murmu	12	14	02	0	0

*****The details of testing and consultancy charges can be obtained from the office of Head of the Department of Computer Science and Engineering.***

ELECTRICAL ENGINEERING

Head of the Department: Dr. Sachin Jain
Email: hod.ele@nitrr.ac.in
Contact: 9441700975

About the Department

The department was established in 1958. Department offers a B.Tech. program in Electrical Engineering, M. Tech. program in Power systems and Power Electronics and, Doctor of Philosophy (PhD) in Electrical Engineering and allied areas. The B.Tech. program in Electrical Engineering has been NBA accredited till 2028. In the current academic year, the students of Electrical Engineering Department are placed in companies like Microsoft, Deutsch Bank, Carl Zeiss, ZS associates *etc,* having highest package in the current academic year 55 LPA.

The department has received a sum of Rs 1.08 Crores fund under DST-FIST program. Various research projects worth 5.96 Crores have been completed/ongoing. Testing and Consultancy are another important activity of the Department of Electrical Engineering, NIT Raipur, along with the Academics & Research activities. The Department has provided numerous technical supports to many Industries/ Utilities/ Firm/ Organizations (Govt./Pvt.) not only in the state of Chhattisgarh but across other states of the Nation, as a consultancy service. As far as Equipment Testing is concerned, the Department has catered Testing Services to a large number of Firms/Vendors; majorly from Chhattisgarh. Consultancy work worth Rs. 10.47 Lacs has been carried out in last five years.

The faculty members of the department are among the top 2% World Scientists Ranking of Stanford University 2023, 2024 and 2025 and have been conferred best faculty and best researchers award of the Institute. They are serving as Editor and Editorial board member of IEEE Transaction on Power Delivery, Vice Chair of Power Electronics Society Chapter of IEEE Madhya Pradesh section.

The students of the Department have been conferred CIGRE Thesis Award 2022 from CIGRE Paris France for his Doctoral research work, Chhattisgarh State Young Scientist Award-2018, Research Excellence in Ph.D. award by Institution of Engineers, POSOCO Power System Award and prestigious PMRF fellowship for 2020, 2021.

Faculty Details

S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 Dr. Sachin Jain (Professor) sjain.ee@nitrr.ac.in	Grid-Tie PV Inverters Design and optimization of power conditioning circuits for DC-DC converters and inverters Power electronic circuit modelling and simulation Switch-mode power supplies Power Electronics and its interface with other Renewable sources like Wind and FC	https://www.scopus.com/authid/detail.uri?authorId=57218964989

2.	 Dr. Archana Sharma (ANRF PM Professor) asharma.pmprof.ee@nitrr.ac.in	Multi gigawatt High Voltage pulsed power technology, Nuclear project governance.	https://scholar.google.com/citations?user=_AfC_1kAAAAJ&hl=en
3.	 Dr. Shubhrata Gupta (Professor) sgupta.ele@nitrr.ac.in	Power System & Power Quality/ Power Quality, Power Electronics & Electrical Machines	https://www.scopus.com/authid/detail.uri?authorId=55495246300
4.	 Dr. Pushkar Deo Dewangan (Associate Professor) pddewangan.ele@nitrr.ac.in	Model Order Reduction, Interval system, Power System	https://www.scopus.com/authid/detail.uri?authorId=57201698653
5.	 Dr. Anamika Yadav (Professor) ayadav.ele@nitrr.ac.in	Power System Protection/Artificial Intelligence, Power System Protection & Soft Computing Techniques	https://www.scopus.com/authid/detail.uri?authorId=55826085900
6.	 Dr. Narendra D.Londhe (Professor) nlondhe.ele@nitrr.ac.in	Measurement & Instrumentation/Signal & Image Processing, Medical Instrumentation, Speech Signal Processing, Machine Learning	https://www.scopus.com/authid/detail.uri?authorId=49361709100

7.	 Dr. Subhojit Ghosh (Professor) sghosh.ele@nitrr.ac.in	Control System & Signal Processing/ Control System, Soft Computing, Biomedical Engg. Pattern Recognition	https://www.scopus.com/authid/detail.uri?authorId=56824733100
8.	 Dr. Swapnajit Pattnaik (Professor) spattnaik.ele@nitrr.ac.in	Power Electronics, Converters for Renewable energy application, Electrification of transportation, Switch mode power supplies	https://www.scopus.com/authid/detail.uri?authorId=26423126400
9.	 Dr. R. N. Patel (Professor) rnpatel.ee@nitrr.ac.in	Power and Energy Systems, Renewable Energy	https://www.scopus.com/authid/detail.uri?authorId=15923879800
10.	 Dr. Ebha Koley (Professor) ekoley.ele@nitrr.ac.in	Power System Protection, Soft Computing Techniques, Electrical Machine & Drives	https://www.scopus.com/authid/detail.uri?authorId=36061264800
11	 Dr. Monalisa Biswal (Associate Professor) mbiswal.ele@nitrr.ac.in	Smart Grid Protection, MicrogridProtection, FACTSdevices, AdaptiveRelaying,Signal Processing Application to Power System Relaying	https://www.scopus.com/authid/detail.uri?authorId=55064066800

12.	 Dr. Binod Shaw (Assistant Professor) binodshaw2000@gmail.com.	Power System/Artificial Intelligence Techniques to Power System	https://www.scopus.com/authid/detail.uri?authorId=45662145100
13.	 Dr. Varsha Singh (Assistant Professor) vsingh.ele@nitrr.ac.in	Multilevel Inverters, DC-Dcconverters, AC Drives, Softcomputing techniques inpower electronics, renewableenergy sources and Advanced Computer Network	https://www.scopus.com/authid/detail.uri?authorId=57199964760
14.	 Dr. Lalit Kumar Sahu (On Lien) (Assistant Professor) lkumar.ele@nitrr.ac.in	Power Electronics & Drives/Vehicular Electrification, Power Electronics Converters, Multilevel Inverters	https://www.scopus.com/authid/detail.uri?authorId=56556426700
15.	 Dr. K Chandrasekaran (Associate Professor) Kchandrasekaran.ee@nitrr.ac.in	High Voltage Engineering (Lightning),Lightning, LEMF, Coupling Computation, Application of GA in High Voltage	https://www.scopus.com/authid/detail.uri?authorId=57202070395
16	 Dr. B. N. Bag (Associate Professor) baidyanathmanit@gmail.com	Network planning and Management (Power System), V-Var-W control	https://www.scopus.com/authid/detail.uri?authorId=56208723300

17	 Dr. D. Suresh (Assistant Professor) dsuresh.ee@nitrr.ac.in	Electrical drives and power electronics	https://www.scopus.com/authid/detail.uri?authorId=15924413200
18	 Dr. Hari Priya Vemuganti (Assistant Professor) hpvemuganti.ee@nitrr.ac.in	Multilevel inverters, Active front converters, Advanced power converters and control-Applications in grid, EV, Energy storage and Modern energy needs	https://www.scopus.com/authid/detail.uri?authorId=57194773890
19	 Dr. Sonti Venu (Assistant Professor) svenu.ee@nitrr.ac.in	Multilevel Inverters, PWM Techniques, Renewable Energy	https://www.scopus.com/authid/detail.uri?authorId=56585871100
20.	 Dr. Ramya Selvaraj (Assistant Professor) rselvaraj.ee@nitrr.ac.in	Chemical and industrial gas sensing, IR spectroscopy, TDLAS, Photoacoustic spectroscopy, Breath gas analysis	https://www.scopus.com/authid/detail.uri?authorId=57189049214
21.	 Dr. Rajan Kumar (Assistant Professor) rkumar.ee@nitrr.ac.in	Power Electronics, Electrical Machines and Drives, Renewable Energy, Power Quality	https://www.scopus.com/authid/detail.uri?authorId=57200851366

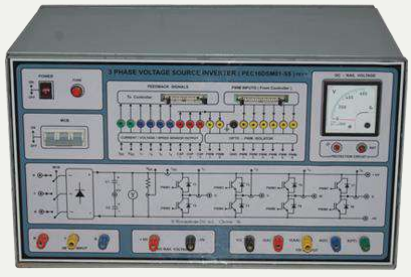
22.	 Dr. Surajit Sannigrahi (Assistant Professor) ssannigrahi.ee@nitrr.ac.in	Active Distribution System, Hybrid Renewable Energy System, Micro Grid and Smart Grid	https://www.scopus.com/authid/detail.uri?authorId=57194079937
23.	 Dr. Chilaka Ranga (Assistant Professor) cranga.ee@nitrr.ac.in	Condition Monitoring of Transformer and Rotating Machines, Artificial Intelligence based Health Assessment and Fault Diagnosis of Electrical Apparatus, Advances in Dielectrics and Electrical Insulation, High Voltage Engineering	https://www.scopus.com/authid/detail.uri?authorId=57189295637
24.	 Dr. Saurav Raj (Assistant Professor) sraj.ee@nitrr.ac.in	Renewable Energy, Swarm and evolutionary optimization techniques, Intelligent techniques to control Power System, Optimization and control of stochastic systems, Power system analysis and optimization, FACTS Devices, Distributed Generation, Power System Planning.	https://scholar.google.com/citations?user=jMPMvDkAAAAJ&hl=en

Research Facilities

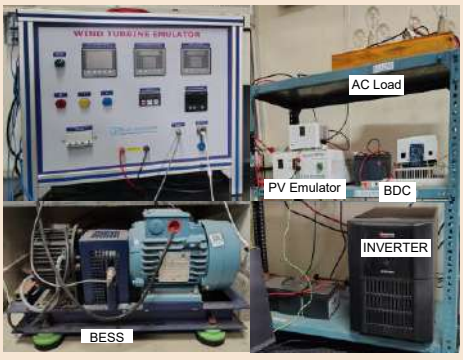
S.No.	Research & Testing Facility	Key Features of Equipment	Instrument Images
1.	OPAL RT Digital Simulator (OP5600 and OP4510)	• Supports two user-programmable FPGA-based I/O management options, the Xilinx Spartan-3 or the most powerful Virtex-6 FPGA processor. • Available expansion slots accommodate up to 8 signal conditioning and analog /digital converters modules with 16 or 32 channels each for a total of fast 128 analog or 256 discrete or a mix of analog and digital signals. • Acts as a single-target system or can be networked into a multiple-target PC cluster for complex applications capable of implementing large models with more than 3000 I/O channels running at a time step below 25 microseconds.	

2.	dSPACE 1103 & 1104, MicroLab Box	• Powerful controller board for rapid control prototyping • Single-board system with real-time processor and comprehensive I/O • CAN interface and serial interfaces ideally suited to automotive applications • High I/O speed and accuracy	
3.	1.2kW Fuel Cell System	• The Integration System includes the 1.2 kW Nexa 1200 Fuel Cell Power Module including a startup kit, the Nexa DC 1200 DC/DC Converter (24 V or 48 V) and the Nexa OSC • Control Software to easily set up and run the system in laboratory environments. • Improved Overall System Efficiency • Improved Service Life • No Draining of Water Required	
4.	DSO YOKOGAWA DLE 850, 8 Channel DSO	• Mixed Signal Oscilloscope • Enhanced productivity small footprint touchscreen oscilloscope • Design and validate advanced serial bus, power supply, and electromechanical systems	
5.	Impulse Generator (150 KV)	• High voltage Impulse Generator • Rating :150 KV, 225 Joules 5 Stage Impulse Generator Set, with each stage of 30 KV	
6.	Static VAR TCSC	• Thyristor-controlled series compensator (TCSC- a typical series FACTS controller) composed of a series capacitance which has a parallel branch including a thyristor-controlled reactor. TCSC provides reactive power compensation for varying the reactance of the transmission line. • TCSC provides 75% capacitive compensation of the total 3 phase line reactance. • Three phase fault breaker/creater to create different types of fault e.g. LG, LL, LLG, LLL, LLLG	

7.	Air Circuit Breaker (ACB) and ACB Test kit (630 A)	• Electromechanical overcurrent relay with IDMT characetristics to detect the fault. • Earth fault relay to detect any ground fault condition. • Air circuit breaker is provided to trip the circuit during fauly • condition. • Induction motor load	
8.	Power Quality Analyzer 1. Fluke 434-II (3Ph) 2. Fluke 143/5 (1ph) 3. Hioki	•±0.04% basic power accuracy, among the best in its class •200 kHz measurement band with flat amplitude and phase accuracy that extend to high frequencies •Simultaneous measurement of multiple circuits and ability to acquire synchronized data using up to 8 devices (for 32 channels)	
9.	Twin Rotor MIMO System	• Identification of nonlinear multiple input multiple output system • Validation of control algorithms on nonlinear MIMO system in real-time • MATLAB interface for real-time visulization and analysis	
10.	100kV Transformer Oil Testing Kit	• Breakdown Voltage tester withthe ratings upto 100 kV. Voltage output: • 0-100kV, most accurate test set with 0.01kV resolution. • voltage ramp rate 2kV/sec tomeet requirements of allregional standards. • Included IEC, ASTM, IS standardtest sequences.	
11.	Programmable DC Power Supplies	• Programmable power supplies are versatile instruments used in various electronic testing, research, and development applications. • Provide controlled DC voltage and current outputs, allowing users to simulate different electrical conditions and test device responses. • Support different output modes such as constant voltage (CV), constant current (CC).	

12.	Solar PV Emulator (5KW) (Ecosense)	• Test and verify different parameters of PV system like – MPPT tracking algorithm of PV inverter, efficiency of MPPT tracking • Measure and verify the overall efficiency and conversion efficiency of PV inverter for variety of solar panels and in varying weather conditions • User can simulate Partial Shading effects and obtain up to four peaks • Testing of Charge Controller • Micro-grid and smart grid control testing	
13.	Spectrum Analyzer	• Reduce Time-to-Fault and increase design confidence with Real-time Signal Processing • Triggers zero in on the Problem • Capture the widest and deepest signals • Wideband preselection filter provides image free measurements in entire analysis bandwidth up to 165 MHz • Performance options for best real time and dynamic range and analysis options offer added value	
14.	Electrical Drives (1 Hp) 1. IM Drives 2. PMSM Drives 3. SRM Drives	• Electric Drive setup including induction motor drive, permanent magnet synchronous motor drive and switched reluctance motor drive, 1 HP each, is used for experimental analysis and testing for wide range of applications such as electric vehicles, industrial automation, home appliance. • The setup consists of intellegent power module and inbuilt controller.	
15.	Intelligent and Discrete Power Module 1. IGBT Module (30A, 600 V) 2. MOSFET Module (30A, 600 V)	• 4 IGBT modules have totally 8 nos of IGBT's to form 3Φ VSI • 8 Nos of high speed IGBT driver with isolation • Diode bridge rectifier with filter capacitor provided for DC-rail voltage FRC connectors are provided for IGBT Gate PWM Inputs (For Interfacing with different Controller) • 5 nos of Hall Effect Current Sensors and one no of Voltage Sensor is provided to	

		sense the DC link current, 3Φ output current and DC link voltage • Separate 230V AC Input for driver Circuit ±15V DC for control Circuits	
16.	Solar Array Simulator (Chroma)	• Fast transient response solar arraysimulation • Simulation of multiple solar cell materialI-V characteristic • Simulation of dynamic irradiation intensity and temperature level from clear day tocloud cover conditions • Shadowed I-V curve output simulation	
17.	Lithium-Ion Battery Bank	• Have protections like over current, over current and over temperature. • Battery Ratings 48V, 100Ah	 
18.	Three Phase FACTS Controller	• Three Phase FACTS Controller module can be used to analyze the effect of shunt operation (STATCOM) series operation (SSSC) and Series –Shunt operation (UPFC) in the transmission line. Three Phase FACTS Controller consist of : • Generator Set-up • Simulated Transmission line module 30km x 2Nos. (200W) • 2 Nos. 3 phase IGBT Based VSI Power Module (200W) • Series & Shunt Transformers (200W) with LC filter • Filter sections for two inverter outputs. • RLC-Load setup • Input/output connecting switches • DSP Controller with simulation software	

19.	Insulation Tester (MOTWANE)	• Insulation testing can be on both LT and HT side • Test range 250 V-5 kV • Insulation testing and polarization test • Application: All rotating machine, transformer, HV/LV switchgears, cables, insulators etc. • Battery assisted	
20.	DC Microgrid Set	• Wind turbine emulator • Solar PV emulator • Single-phase Inverter • Battery Energy Storage System • Bidirectional Converter • Single-phase AC load • 48 VDC microgrid operation	

Major and Recent Consultancies Provided by the Department

S. No.	Name of the Consultancy Work	Consulting Organization/Firm/Industry/Institute	Fiscal Year	Consultant (Faculty)
1	Vetting of Electrical Drawing/Specifications in connection with the redesigning and augmentation of electrical power system at AIIMS Raipur (Part: A)	M/S RSVP Engineering and Consultant, B-60, Street-34, Smriti Nagar, Bhilai, Chhattisgarh- 490024	2019-20	Dr. B. Bag Dr. L. K. Sahu
2	Vetting of Bill of Quantities and Schematic Drawing of PLC and Electrical Panels for Roshni-I MVRWSS, Dist: Khandwa, Madhyapradesh	M/s. ADROID Associate Pvt. Ltd., 76-77, Sector A, Sainath Colony, Near Saraswati Shishu Mandir, Indore, Madhyapradesh- 452018	2020-21	Dr. B. Bag Dr. B. Shaw
3	Vetting of Electrical Drawing/Specifications in connection with the redesigning and augmentation of electrical power system at AIIMS Raipur (Part: B)	M/S RSVP Engineering and Consultant, B-60, Street-34, Smriti Nagar, Bhilai, Chhattisgarh- 490024	2021-22	Dr. B. Bag Dr. L. K. Sahu

4	Consultancy and Testing of Generator Set for 12 MW operation	M/s API Ispat & Powertech (P) Ltd. Indtl. Growth, P-ii, Siltara, Raipur, Chhattisgarh	2021-22	Dr. S. Pattnaik Dr. S. Jain
5	Inspection of Turbo Generator set after capacity enhancement	M/s ShivalayIspat & Power Pvt. Ltd Guma – Urla Road, Village – Kara, Raipur 493221 (C.G.)	2022-23	Dr. B. Bag Dr. S. Pattnaik
6	Inspection of Turbo Generator set after capacity enhancement from 10 MW to 12 MW	M/s HI-TECH POWER & STEEL LIMITED, Vill – Parsada, Post - Sarora, The. – Tilda – 493114, Distt. – Raipur (C.G.)	2022-23	Dr. B. Bag Dr. S. Pattnaik
7	Training of Electricians under ACE Program, by Panasonic (India)	INFIMIND EDUCARE FOUNDATION SARVABHOMA NAGAR, 8,, SARVABHOMA NAGAR, KSRTC LAYOUT, UTRAHALLI, Bengaluru (Bangalore) Urban, Karnataka, 560061	2023-24	Dr. B. Bag Dr. A. Yadav
8	Vetting of Electrical Load Data for Housing Project at Vedanta Township, Lanjigarh, Odisha	BSBK PRIVATE LIMITED A BEEKAY GROUP COMPANY 4TH FLOOR SURYA TREASURE ISLAND MALL BHILAI- 490020 (C.G.)	2023-24	Dr. B. Bag Dr. S. Pattnaik
9	Third Party Quality Control of RBI Office Building at Naya Raipur	C.P.W.D., Raipur	Ongoing	Dr. A. Yadav Dr. S. Jain Dr. D. Suresh Dr. V. Sonti
10	Vetting of HVAC/ Central Air Conditioning Heat load calculation Sheet	New Bharat Refrigeration, 11,117, Friend's Arcade, Beside Hotel Lotus, Supela, Bhilai, Durg (C.G.)	Ongoing	Dr. B. Bag Dr. S. Pattnaik
11	Vetting of Electrical Drawings and specifications for NCL, Khadiya	M/s Bhaavini Infratech, H.O.- 154, Indira Commercial Complex, Korba	2023-24	Dr. A. Yadav Dr. B. Bag
12	To carry out comprehensive technical studies to access the impact of penetration of Distributed Renewable Energy (DER) system on the distribution system and assess the impact of different type of storage system thereof.	CSPDCL, Raipur, Chhattisgarh	Completed	All the Faculty members

*****The details of testing and consultancy charges can be obtained from the office of Head of the Department of Electrical Engineering.***

ELECTRONICS AND COMMUNICATION ENGINEERING

Head of the Department: Dr. Bijayananda Patnaik
Email: hod.ece@nitrr.ac.in
Contact: 09439322631

About the Department

The department was established in 1985. Department focuses on the theoretical and practical aspects of electronic devices, communication systems, and related technologies. The department offers undergraduate (B.Tech.) in Electronics and Communication with 114 intake and postgraduate (M.Tech) in VLSI and Embedded System with 24 intake, with PhD in various ECE fields providing students with a comprehensive understanding of electronic systems, communication networks, and their applications in various industries.

The department likely provides a blend of classroom teaching, laboratory work, projects, and research opportunities to equip students with both theoretical knowledge and practical skills in the field of electronics and communication. Department has state of Art VLSI, Communication, Computer Vision Labs where students from other institutions can register for summer internship. Departmental faculty members are engaged in various research projects in the field of VLSI, Communication, Computer Vision, Optimisation and Machine Learning.

Faculty Details

S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 Dr. Shrish Verma (Professor) shrishverma@nitrr.ac.in	Digital system design, image processing, computer & communication networks, distributed processing	https://www.scopus.com/author/submit/profile.uri?authorId=7402328422&origin=AuthorNamesList&offset=1&authorSt1=verma&authorSt2=shrish&resultsKey=AUTH_1722968005
2.	 Dr. Guru Prasad Subas Chandra Mishra (Professor) gpscmishra.ece@nitrr.ac.in	Nanoelectronics & VLSI	https://www.scopus.com/authid/detail.uri?authorId=56349630600

3.	 Dr. Toshanlal Meenpal (Professor) tmeenpal.ece@nitrr.ac.in	Conventional & Deep Learning based Image/Video Analysis, Understanding & Processing, Computer Vision, Multimedia Security, Multimedia Forensics.s	https://www.scopus.com/authid/detail.uri?authorId=54917550600
4.	 Dr. B. Acharya (Professor) bacharya.ece@nitrr.ac.in	Cryptography, Signal Processing, High-performance Architectures, Hardware Security, FPGA-based Designs	https://www.scopus.com/authid/detail.uri?authorId=24829364200
5.	 Dr Ajay Singh Raghuvanshi (Associate Professor) asraghuvanshi.ece@nitrr.ac.in	Digital Communication, Wireless Sensor Network, Artificial Intelligence, Application of Machine Learning in internet of things (IOT).	https://www.scopus.com/inward/authorDetails.uri?authorID=14013389300&partnerID=5ESL7QZV&md5=f13a5e792a9923e57caf1d13b57fe345
6.	 Dr. Bijayananda Patnaik (Associate Professor) bpatnaik.ece@nitrr.ac.in	Free Space Optics, Fiber Optic Communication, IsOWC System, Optical Signal Processing, Non-linear Optics, Digital Communication	https://www.scopus.com/hirsch/author.uri?accessor=authorProfile&auidList=55071813600&origin=AuthorProfile&display=hIndex
7.	 Dr. Chitrakant Sahu (Professor) csahu.ece@nitrr.ac.in	VLSI and Microelectronics, Non-Classical CMOS Devices and Sensors	https://www.scopus.com/author/submit/profile.uri?authorId=55968801300&origin=AuthorNamesList&offset=1&authorSt1=sahu&authorSt2=chitrakant&resultsKey=AUTH_1722993901

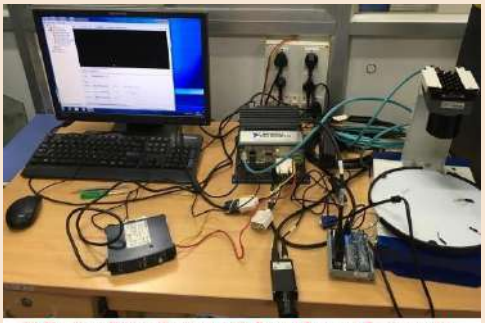
8.	 Dr. Siddharth Deshmukh (Associate Professor) sdeshmukh.ece@nitrr.ac.in	Statistical Signal Processing, Optimization theory, Wireless Communication, Cyber Physical Systems	https://www.scopus.com/authid/detail.uri?authorId=55246388000
9.	 Dr. Saikat Majumder (Associate Professor) smajumder.ece@nitrr.ac.in	Wireless communication, Machine learning and deep learning	https://www.scopus.com/authid/detail.uri?authorId=37102030700
10.	 Dr. Anshul Gupta (Associate Professor) agupta.ece@nitrr.ac.in	Dielectric Resonator Antennas, MIMO Antennas, Microwave Measurements	https://www.scopus.com/authid/detail.uri?authorId=56567030100
11.	 Dr. Suman Kumar Saha (Associate Professor) sksaha.ece@nitrr.ac.in	Filter Design, Signal Processing, Metaheuristic Optimization	https://scholar.google.co.in/citations?user=cGcQ8n4AAAAJ&hl=en
12.	 Dr. Alok Naugarhiya (Associate Professor) anaugarhiya.ece@nitrr.ac.in	Microelectronics and VLSI Design	https://www.scopus.com/authid/detail.uri?authorId=56081482300

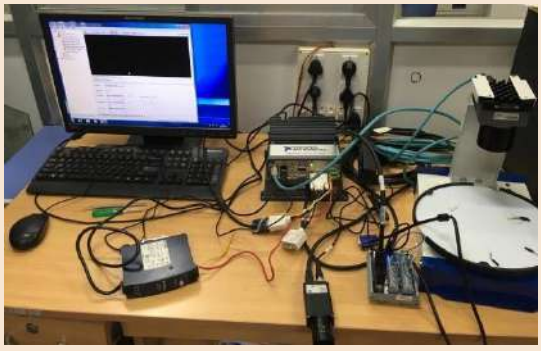
13.	 Dr. Kaushal Kumar Nigam (Associate Professor) kknigam.ece@nitrr.ac.in	VLSI Devices and Circuits, FETs Based Biosensor, Strain Analysis and Ferroelectrics Based FETs	https://www.scopus.com/authid/detail.uri?authorId=57188690779
14.	 Sujay Chakraborty (Assistant Professor) Schakraborty.ece@nitrr.ac.in	Soft computing and applications, wireless sensor network	https://scholar.google.com/citations?user=-oenEcEAAAAJ&hl=en&oi=ao
15.	 Dr. Deboraj Muchahary (Assistant Professor) dmuchahary.ece@nitrr.ac.in	Solar cell andSemiconductordevices andVLSI	https://www.scopus.com/authid/detail.uri?authorId=56958455800#tab=topics
16.	 Dr. Ashish Kumar (Assistant Professor) akumar.ece@nitrr.ac.in	MEMS based Sensors, Wideband semiconductor devices	https://www.scopus.com/authid/detail.uri?authorId=57214420157
17.	 Dr. Mayur Katwe (Assistant Professor) mvkatwe.ece@nitrr.ac.in	Radio Resource Management, 5G and Beyonnd Wireless Networks, Reconfigurable Intelligent Surfaces, Next-Generation Multiple Access Schemes, Localization	https://scholar.google.com/citations?hl=en&user=7vPFpf8AAAAJ

18.	 Dr. Sukeshni Tirkey (Assistant Professor) stirkey.ece@nitrr.ac.in	VLSI, Semiconductor Devices & Circuits, MicroNano Electronics, Device Modeling and Simulation, CMOS Circuit Design	https://scholar.google.com/citations?hl=en&user=V2yS7IQAAAAJ

Research Facilities

S.No.	Research & Testing Facility	Key Features of Equipment	Instrument Images
1.	PCB machine	The use of PCB making machines streamlines the manufacturing process, improves precision, and enables efficient production of high-quality printed circuit boards for a wide range of electronic devices. The specific machines used can vary based on the scale of production, the complexity of the PCB design, and the desired manufacturing processes.	
2.	Wireless SENSEnuts	Wireless Sense Nuts are full fledge wireless sensor nodes with sensor modules, Gateway modules, Radio Modules capable of implementing 100 nodes wireless sensor network. The sensor module can support Temperature, humidity, illuminance, pressure, motion, IR and air-quality sensors.	

3.	IoT Setup for Centre of excellence	IoT set-up consists of application development environment for air quality monitoring, water quality monitoring, smart metering, smart agriculture, smart environment, smart industries and smart buildings. It consists of various sensor node e.g. PM2.5, PM 10, CO2, CO, Water PH, Water Temp, Water ORP sensor, soil moisture, soil temperature, motion, smoke, proximity sensors , RTD, solar radiation, wind directions etc.	
4.	NI Image Processing Smart camera equipments	Features =VGA, 1.6 GHz Intel Atom processor Processor, Color Smart Camera, CCD image sensor, dynamic and real-time communication option, useful for PLCs, human machine interfaces, robotics, sensors,Automated Inspection (AI) software etc.	 NI Machine Vision System with Smart Camera Equipment's
5.	Vector Network Analyser(with radiation measurement setup)	A Vector Network Analyzer (VNA) is a sophisticated electronic test instrument used to analyze and characterize the performance of radio frequency (RF) and microwave devices, such as antennas, filters, amplifiers, and other passive and active components. VNAs operate by measuring the amplitude and phase of signals at different frequencies, providing valuable insights into the behavior of the devices under test.	

6.	Machine Vision System (End to end setup)	Features = Vision system, 24 Vdc 5A, I/O Terminal Block, I/O Terminal Vertical, I/O Terminal Horizontal, 4 GB Indus Rated, 70 FC IEEE 1394 b, IEEE 1394 b Camera 4 mm, IEEE 1394 b Camera, 4 FM IEEE Monochrome, Camera 4 mm, Camera, 35 mm Edmud optics, 70 gc, Twisted pair 10 mm, GIGE vision	
Software			
1.	Net Sim Simulator Software v13.3		
2.	Visual TCAD Software		
3.	SILVACO TCAD Software		
4.	OptiSystem Software		

**The details of testing and consultancy charges can be obtained from the office of Head of the Department of Electronics and Communication Engineering.

HUMANITIES AND SOCIAL SCIENCES

Head of the Department: Dr. Samir Bajpai
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Contact: 9826167065

About the Department

The department was established in 1958 (formerly, the *Department of English* under the Government College of Engineering and Technology). The Department is one of the emerging departments, with a plethora of research and teaching experts in the subject areas ranging from (Core and Allied) of English literature, Linguistics, Sociology, Management and Consumer Psychology, to Yoga and Health, Value Education for Consciousness Development. The department develops verbal and non-verbal communication skills in the students and introduces the neuro-cognitive aspects of language. It further facilitates the assimilation and practice of higher-order managerial decision-making skills. It imparts the practice of Yoga for healthy living, to develop the ability to understand coexistence-based living through Value Education to cultivate professionals efficient in communicative, managerial, and entrepreneurial skills. The department aims to enhance the placement prospects of Engineers and Technocrats in leading multinational companies, public sector undertakings, and other entrepreneurial ventures. The department has produced more than 80 publications in acclaimed journals/publication houses. The department facilitates multi-disciplinary doctoral research ranging from English Literature, Linguistics, ELT, and Business Management to Sociology.

The following sponsored research projects are currently running in the Department:

- Developing a Map Plan to Support Children Return to School in Identified Villages and Skill Development of Youth of Select Area by RK Foundation
- The project titled Prospects and Challenges in the Empowerment of the Women of the De-notified Tribes - A Study of the Natanis (Nat Tribeswomen) in Chhattisgarh, funded by the National Commission for Women, Government of India.
- The project titled- "An Empirical Study of the Promotion of Employability Skills through ICT-CALL Modules in Higher Technical Institutes in Rural Districts of Chhattisgarh", funded by the Indian Council of Social Sciences Research (ICSSR), New Delhi.
- The project titled- A Study on Business Vertical Farm to Fork, International Tractors, funded by Sonalika Social Development Society, New Delhi.

Faculty Details			
S.No.	**Name of the Faculty**	**Key Research Areas**	**Research Link**
1.	 Dr. Jaya Dwivedi (Professor) jdwivedi.eng@nitrr.ac.in	American English Literature, Diaspora Studies & Comparative Literature	https://www.scopus.com/authid/detail.uri?authorId=57192716692
2.	 Dr. Anoop Kumar Tiwari (Professor) aktiwari.eng@nitrr.ac.in	American Literature; British Literature; Psychoanalysis, Indian Writing in English, Cultural Studies	https://www.scopus.com/authid/detail.uri?authorId=57202300057
3.	 Dr. Shashikanta Tarai (Associate Professor) starai.iitm@gmail.com	Linguistics (Phonetics and Phonology); Neurolinguistics & Cognitive Neuroscience	https://www.scopus.com/authid/detail.uri?authorId=57192182865
4.	 Dr. Sandip Sarkar (Associate Professor) ssarkar.eng@nitrr.ac.in	Regional Literature; Diaspora, Nation; Indian Writing in English.	https://www.scopus.com/authid/detail.uri?authorId=55926027400
5.	 Dr. Moksha Singh (Associate Professor) msingh.eng@nitrr.ac.in	Social change and mobility; Human rights and social justice	https://www.scopus.com/authid/detail.uri?authorId=57190261366

6.	 Dr. Y.V. Babu (Associate Professor) yvbabu.eng@nitrr.ac.in	English Language Teaching (ELT); Communication Skills; Soft Skills; British English Literature	https://www.scopus.com/authid/detail.uri?authorId=57193863934
7.	 Dr. Chetna Sharma Rajput (Assistant Professor) csrajput.hss@nitrr.ac.in	Marketing and Advertising; Consumer Behaviour and Consumption Psychology; Innovation and Entrepreneurial Motivation	https://scholar.google.com/citations?user=2FGZliIAAAAJ&hl=en
8.	 Dr. Anil Manjhi (Assistant Professor) amanjhi.hss@nitrr.ac.in	Psychoanalysis, American Literature, Gender Studies, Indian Mythology, Literary Theory & Criticism, Law & Gender Justice	https://www.scopus.com/authid/detail.uri?authorId=57803507100

Facilities Available

S.No.	Facility	Key Features	Images
1.	**Language Lab** To enhance communicative capabilities of the Undergraduates, this lab offers great learning and interactive ambience. **ETNL Software** The Language Lab is equipped with ETNL software. ETNL software is fully computerized and futuristic language lab software with 100% digital functionality. It offers a multimedia based interactive learning environment where teachers and students effortlessly but literally at the click of the mouse share course materials and work in unison to enhance language proficiency.	• **Hardware:** • 52 Computers Systems equipped with ETNL language software; headphones microphone enabled. • Smart Classroom with 65 Inch LED TV • **Software features:** • ETNL software provides direct sound transmission to students' headsets, offering clear guidance from teachers. • Individual headsets with microphones ensure privacy, confidence, and reduced classroom distractions. • The software tailors learning to each student's level, enhancing comprehension and language skills. • It encourages self-paced learning, improving listening skills and accent through recorded comparisons.	 
	Research Scholars' Lab: It provides seating space for 24 seating capacity exclusively for Ph.D. Scholars	• Hardware: • 28 Computer systems, 01 Projector, 01 Printer • Software: Other than regular software available on the computer systems, the lab has two softwares: • **LIWC 2015 Software** • **(ii) E-Prime 3.0**	
	(i) LIWC 2015 Software Linguistic Inquiry and Word Count: LIWC2015 Software is a highly efficient Text Analyzing Software used for research purposes	• In LIWC2015, consists of following three primary ways to analyze text: • Choose one or more text files for analysis • Choose entire directories and subdirectories containing text files for analysis	

		• Choose text columns within an Excel file (or other delimited spreadsheet file, such as CSV).	
	(ii) E-Prime 3.0 E-Prime is a world-leading stimulus presentation software Used for Psychological studies	• SlideChoice sub-object to design multiple choice surveys, recognitions, and recalls • SlideSlider sub-object to design scales and sliders Find and replace properties in an experiment • Run an experiment in a floating window for quicker inspection and debugging • Quickly start an experiment from any List • Improved interface with tabbed workspace • SlideButtons for an area of response collection without using script • Slide Layout Templates for quick design • Experiment Library with pre-built experiments to download • New Task Event for executing user script	
5.	**Value Education** Value Education (Chetna Vikas) Consciousness Development through Human Values. Value Education based on the philosophy of Jeevan Vidya – Madhyastha Darshan (Coexistence Philosophy) aims at the holistic development of students. The program helps learners understand the true meaning of happiness, prosperity, and harmonious living in human life. The course facilitates clarity about:	• Counselling Sessions for Mental Health • Human Value Sessions for happy relationships. ▪ Counselling and Guidance Sessions to support students' emotional and mental well-being. ▪ Human Value Sessions for developing trust, respect, and harmonious relationships. ▪ Interactive Dialogues and Reflection Workshops to explore self-awareness and responsible living. ▪ Community and Social Harmony Programs encouraging cooperation and mutual understanding.	

	Understanding of Self (Human Consciousness) Harmony in Family and Human Relationships Living with Trust, Respect, Responsibility, and Cooperation Balance between Human Beings and Nature Living in Coexistence and Universal Harmony Through reflective dialogue and experiential learning, students develop the ability to live with right understanding, ethical conduct, and social responsibility.	• Facilities Available • In the perspective of Jeevan Vidya, education is not limited to skill development. Its deeper aim is the development of right understanding (Samyak Bodh), right feeling, and right conduct, leading to a harmonious individual, family, society, and world.	 
6.	**Yoga & Health** Yoga offers extraordinary discipline to get into a good frame of mind and along with maintaining a healthy body.	• Spacious & Peaceful Yoga Hall. • Cleansing space for kriyayas like shuddhi, Tratak etc.	  

15-Day Training Program on Professional Communication and Business Writing



The Department of Humanities and Social Sciences at the National Institute of Technology, Raipur, provides a comprehensive 15-day training program on "Professional Communication and Business Writing" tailored specifically for professionals in different fields both from government and private sector. This program aims to equip participants with essential communication skills vital for navigating the dynamic landscape of modern businesses.

The 15-day training program is meticulously designed to provide participants with practical insights, strategies, and techniques to enhance their communication prowess. Through a blend of interactive workshops, hands-on exercises, and real-world case studies, participants will:

1. Master the Art of Business Writing: Learn to compose clear, concise, and persuasive business documents such as emails, reports, proposals, and memos. Understand the nuances of professional writing, including tone, structure, and formatting, to effectively convey ideas and messages.

2. Develop Effective Presentation Skills: Acquire techniques to deliver impactful presentations with confidence and clarity. From structuring compelling narratives to using visual aids effectively, participants will learn how to captivate and engage their audience during meetings, pitches, and conferences.

3. Enhance Interpersonal Communication: Cultivate essential interpersonal skills for building rapport, resolving conflicts, and fostering collaboration in professional settings. Explore effective communication strategies for networking, negotiation, and team communication to navigate complex organizational dynamics successfully.

4. Receive Personalized Feedback and Guidance: Benefit from personalized feedback and coaching from experienced faculty members and industry experts. Engage in interactive discussions, role-playing exercises, and simulations to hone communication skills in a supportive learning environment.

This program aims to equip participants with vital communication skills necessary for success in today's competitive business environment.

*****The details of Training programme charges can be obtained from the office of Head of the Department of Humanities and Social Science.***

INFORMATION TECHNOLOGY

Head of the Department: Prof Sudhakar Pandey
Email: hod.it@nitrr.ac.in
Contact: 9407627136

About the Department

The Department of Information Technology was established in the year 2000. The department imparts cutting-edge skill development in information Technology education. In addition, the department is also dedicated to foster Research, Technological Innovation and Consultancy in the frontier areas of Artificial Intelligence, Web development, Software design&development, Internet of Things, Cyber Security & Blockchain,Medical Imaging, Health Informatics, 5G and Quantum Computing, etc. The present strength of the department is as follows: 114 intakes in B.Tech (IT), 30 intakes in MTech (IT) programme. 30 PhD scholars have graduated from the department and currently 50 Ph.D. research scholars (Full Time + Part Time) are enrolled in the PhD program. Students of the department are placed in reputed software companies such as Amazon, Microsoft, Adobe, ARCESIUM, DE Shaw, Deloitte, Optum, G.E. Healthcare, Goldman Sachs, Oracle, Tekion, Visa, TCS, HCL-Tech, Western Digital, etc, with an average CTC of 20 Lacs.The department has a sanctioned strength of 19 faculty members with 1 Professor, 9 Associate Professors, 7 Assistant Professors and 2 Temporary faculty members.

The department has received nearly a sum of Rs.2.5 Crores fund, for various research projects funded by different agencies like MeitY, DST, SERB(CRG), SERB (EEQ), IBITF (DST(ICPS)), TIHAN (DST(ICPS)), SPC(C.G.), CGCOST, etc. Consultancy work of a sum of 7.2 Lacs has been carried out in last three years. The department has published more than 400 research papers in various peer-reviewed Transactions, Journals, Conferences, and book chapters. Four faculty members from the department are in the top 2% of the scientists list released by Stanford University, USA, published by Elsevier.

Faculty Details

S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 Dr. Sudhakar Pandey (Professor) Spandey.it@nitrr.ac.in	CO, DELD, CMC, Distributed Computing, CBNST, Principles of Programming Language, Ad hoc Networks, Wireless Sensor Networks, Vehicular Delay Tolerant Networks, IoT, Fog Computing. 5G Communication.	https://www.scopus.com/authid/detail.uri?authorId=57220976603

2.	 Dr. Satya Prakash Sahu (Associate Professor) spsahu.it@nitrr.ac.in	Artificial Intelligence, Computer Vision, Digital Image Processing, Machine Learning Soft Computing and Medical Imaging	https://www.scopus.com/authid/detail.uri?authorId=57201352620
3.	 Dr. Rakesh Tripathi (Professor) rtripathi.it@nitrr.ac.in	Data Center, Networks, Game Theory and Optimization, Named Data Networking (NDN), IoT, Blockchain	https://www.scopus.com/authid/detail.uri?authorId=57189242622
4.	 Dr. Sanjay Kumar (Associate Professor) skumar.it@nitrr.ac.in	VDTN, Fog Computing	https://www.scopus.com/authid/detail.uri?authorId=57224463562
5.	 Dr. Suvendu Rup (Professor) srup.it@nitrr.ac.in	Computer Vision, Image and Video Processing, Medical Image Analysis, Machine Learning, Deep Learning, Visual Surveillance	https://www.scopus.com/authid/detail.uri?authorId=35119421900
6.	 Dr. Pavan Kumar Mishra (Associate Professor) pavanmishra.it@nitrr.ac.in	5G, software development	https://www.scopus.com/authid/detail.uri?authorId=57191262605

7.	 Dr. Rajesh Doriya (Associate Professor) rajeshdoriya.it@nitrr.ac.in	Distributed Computing, Cloud Computing, Artificial Intelligence, Robotics, Soft Computing Techniques, Network Security	https://www.scopus.com/authid/detail.uri?authorId=54917442000
8.	 Dr. Rekh Ram Janghel (Associate Professor) rrjanghel.it@nitrr.ac.in	Computational Intelligence,Image Processing,	https://www.scopus.com/authid/detail.uri?authorId=26639440900&origin=recordpage
9.	 Dr. Govind P. Gupta (Associate Professor) gpgupta.it@nitrr.ac.in	Internet of Things,Cyber Security, BlockchainCyber Threat Intelligence,Applied Machine Intelligence	https://www.scopus.com/authid/detail.uri?authorId=35190256600
10.	 Dr. Rupesh Kumar Dewang (Associate Professor) rkdewang.it@nitrr.ac.in	Machine Learning,BigData,Data Science, and Cyber/Information Security,IOT,Computer Vision, Artificial Intelligence, Electronic Device and Motors Fault Detection using Ml.	https://scholar.google.co.in/citations?hl=en&user=68krw04AAAAJ
11.	 Dr. Mridu Sahu (Associate Professor) mrisahu.it@nitrr.ac.in	Machine Learning, Signal Processing, Spatial Data Mining	https://www.scopus.com/authid/detail.uri?authorId=56500146900

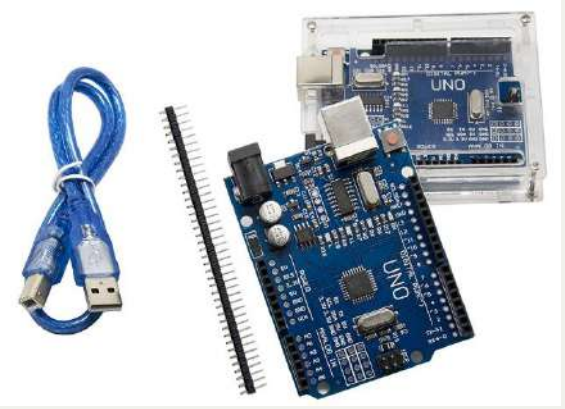
12.	 Dr. Tirath Prasad Sahu (Associate Professor) tirathpdsahu@gmail.com	Data Mining and Analysis, Machine Learning, Feature Selection, Text Mining, Social Mining, Metaheuristics, Bioinformatics, Image Processing and Analysia etc.	https://www.scopus.com/authid/detail.uri?authorId=57190001752
13.	 Dr. Gyanendra Kumar Verma (Associate Professor) gkverma.it@nitrr.ac.in	Artificial Intelligence, Affective Computing, Digital Image Processing	https://www.scopus.com/authid/detail.uri?authorId=36700662900
14.	 Dr. Chandrashekar Jatoth (Associate Professor) jchandrashekar.it@nitrr.ac.in	Cloud/Fog Computing, Energy Informatics, AI, Blockchain, Quantum Computing, IOT	https://scholar.google.com/citations?user=VU6reN0AAAAJ
15.	 Dr. Rayanoothala Praneetha Sree (Assistant Professor) rpraneethasree.it@nitrr.ac.in	Data Mining , Big Data Analytics, Distributed Data Mining, Machine Learning, Databases, Pattern Recognition, Soft Computing.	https://scholar.google.co.in/citations?user=mQe890sAAAAJ
16.	 Dr. Deepika Agrawal (Assistant Professor) dagrawal.it@nitrr.ac.in	Wireless Sensor Network, Optimization, Internet of Things	https://scholar.google.co.in/citations?hl=en&user=9mEBy5EAAAAJ

17.	 Dr. Kapil Kumar Soni (Assistant Professor) kksoni.it@nitrr.ac.in	Algorithms & Quantum Computing, Quantum Pattern Matching, Quantum Machine Learning, Quantum Networks & Cryptography, and Quantum Medical Informatics.	https://scholar.google.co.in/citations?hl=en&user=PIs_kyIAAAAJ

Research Facilities

S.No.	Facility	Key Features of the Equipment	Instrument Image
1.	**Workstations** (High Performance Computing System)	Workstations are primarilyused to perform computationally intensive scientific and engineering tasks. These workstatins are used for Big data processing and Machine and Deep learning based rsearch projects. The key specification of the Workstations of deparment of IT are as follows: Intel Xeon processor @ 2.5GHz with 8 to 16 cores, 128GB RAM, NVIDIA Grapphic card (16GB).	

2.	**IoT lab**	The IoT Lab provides support to applied research aimed at the design, development and testing of solutions related to the Internet of Things, with specific reference to its own applications in the field of home automation, Environmental Monitoring, Agri-Tech-based solution, industrial automation, and logistics / asset management. 	   

3.	**Arduino UNO**	Arduino UNO is a microcontroller board based on the **ATmega328P**. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started. You can tinker with your UNO without worrying too much about doing something wrong, worst-case scenario you can replace the chip for a few dollars and start over again.	
4.	**Benchmark security Kit.**	Benchmark Security kit is used for cyber risk analytics and the tasks of remediating the most critical security issues and refocusing overall IT strategy. This is a network security tool kit for study the behaviour of network performance.	 
5.	**UAV (Drone)**	Department is having a Drone which is used for vision-based real-time data collection for computer vision-based research and big data analytics. This vision aerial drone is generally a perfect choice for research applications such as. ● Surveillance of remote and harsh Terrain ● Environmental Monitoring ● Geophysical Surveying ● Natural Resource Management	 

The details of testing and consultancy charges can be obtained from the office of Head of the Department of Information Technology.

MECHANICAL ENGINEERING

Head of the Department: **Dr. N.V. Swamy Naidu**
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Contact: 09963390988

About the Department

The department was established in 1958. It conducts a B. Tech. program, three M. Tech. Programs and a PhD program with total 117 undergraduate intake and 47 post graduate yearly intakes. All the undergraduate and postgraduate programs are accredited by NBA. The total departmental faculty strength is total 32. The faculty members of the Department have more than 13 research projects (including completed and ongoing), 6 patents and have produced more than 35 PhDs. Department have published more than 350 research papers in various conference, journals, and book chapters. Department have completed the Testing and consultancy services more than Rs 13.00 lacs to various industries in the Chhattisgarh region. Faculty and students have participated in various co-curricular and extra-curricular activities.

Faculty Details

S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 Dr. S. Sanyal (Professor) ssanyal.mech@nitrr.ac.in	Machine Design, Mechanism Synthesis, Stress Analysis	https://www.scopus.com/authid/detail.uri?authorId=54414884700
2.	 Dr. S. L. Sinha (Professor) slsinha.mech@nitrr.ac.in	Computational Fluid Dynamics in Thermal Engg. Alternative Fuels	https://www.webofscience.com/wos/author/search GoogleScholar: http://scholar.google.co.in/citations?hl=en&user=KgkCT0QAAAAJ
3.	 Dr. R. Salhotra (Professor) rsalhotra.mech@nitrr.ac.in	Heat Transfer, Thermodynamics Thermal Engg, Fluid Mechanics, Computational Fluid Dynamics	https://scholar.google.com/citations?hl=en&user=QzAenV4AAAAJ Scopus Id: 56736678200

4.	 Dr. S. D. Patle (Professor) sdpatle.mech@nitrr.ac.in	Thermal Energy & Environmental Engineering.	https://scholar.google.com/citations?hl=en&user=Do33H8EAAAAJ
5.	 Dr. S. P. S. Matharu (Professor) spsm.mech@nitrr.ac.in	Machine Design, Tribology of Rolling Element Bearings.	https://scholar.google.co.in/citations?user=T7r8rbsAAAAJ&hl=en
6.	 Dr. A. K. Tiwari (Professor) aktiwari.mech@nitrr.ac.in	Thermal Engineering, Solar Thermal Application, Passive heating & cooling, Refrigeration and Air Conditioning, Alternate Fuels of IC engine.	Scopus Id 57212912201555877447 00
7.	 Dr. R. K. Yadav (Professor) rkyadav.mech@nitrr.ac.in	Thermal Energy	https://www.researchgate.net/profile/R-K-Yadav
8.	 Dr. N. K. Jain (Professor) nkjain.me@nitrr.ac.in	Solid Mechanics, Vibration, Machine Design.	https://scholar.google.com/citations?hl=en&user=N5bHP5MAAAAJ&view_op=list_works

9.	 Dr. S. Bhowmick (Professor) sbhowmick.mech@nitrr.ac.in	Structural Mechanics, Fluid Structure Interaction, Machine Design, Spectral and Finite Element Methods.	https://www.scopus.com/authid/detail.uri?authorId=23395647200
10.	 Dr. N. V. Swamy Naidu (Professor) nvsnaidu.mech@nitrr.ac.in	Micro/Nano-Composite Structures, Ablative polymer composites, Thermal Protection system, Conductive Polymer composites, HEA, Solid Mechanics, FEM and Additive manufacturing	https://www.scopus.com/authid/detail.uri?authorId=11639296100
11.	 Prof. G. K. Sahu (Associate Professor) gksahu.mech@nitrr.ac.in	Engg. Material for Design and Production.	https://scholar.google.com/citations?user=-6o3Kf4AAAAJ&hl=en&oi=ao
12.	 Dr. S. K. Dewangan (Associate Professor) skdewangan.mech@nitrr.ac.in	CFD applications in Solar thermal & Other energy systems, CFD applications in oil-well drilling & multiphase flow systems, Rheology analysis of slurry and other complex fluids	https://scholar.google.com/citations?hl=en&user=DbmGgr4AAAAJ&view_op=list_works
13.	 Dr. S. K. Mukti (Professor) skmukti.mech@nitrr.ac.in	Industrial Engg& Management, Enterprise Resource Planning, Management Information System, Production Technology.	https://scholar.google.com/citations?hl=en&user=wWlGq9cAAAAJ

14.	 Dr. V. K Gaba (Professor) vgaba.mech@nitrr.ac.in	Thermodynamics Heat Transfer, Refrigeration & Air Conditioning.	https://www.scopus.com/authid/detail.uri?authorId=56458084900
15.	 Dr. A. R. Singh (Professor) arsingh.mech@nitrr.ac.in	Industrial Engg, SCM, Optimization.	https://www.scopus.com/authid/detail.uri?authorId=55487566900
16.	 Dr. S. Bhattacharya (Associate Professor) somnabhatt.me@nitrr.ac.in	Design, XFEM, Computational Solid Mechanics, Dynamics (Computational Methods).	https://www.scopus.com/affil/profile.uri?afid=60104578
17.	 Dr. M. K. Pradhan (Associate Professor) mkpradhan.me@nitrr.ac.in	Manufacturing of Advanced Materials, Additive Manufacturing Design of Experiments, Micro/Nano Manufacturing, MEMS	https://scholar.google.com/citations?user=YY4YnCUAAAAJ&hl=en&oi=ao
18.	 Dr. G. Srinivasu (Associate Professor) srinisetti.me@nitrr.ac.in	Composite Materials, Titanium Alloys, Optimization and Modelling, FEM, ANN.	https://scholar.google.co.in/citations?user=Fjiovs

19.	 Dr. H. K. Narang (Associate Professor) harenar.me@nitrr.ac.in	Production Engg, Arc Welding, Composite Material, FEM Modelling, Soft Computing.	https://scholar.google.com/citations?hl=en&user=cqBW8IYAAAAJ
20.	 Dr. (Mrs.) N. Netam (Associate Professor) nishane.me@nitrr.ac.in	Thermal Engg, Heat & Mass Transfer, Two Phase Materials.	https://www.scopus.com/authid/detail.uri?authorId=57190937057
21.	 Dr. R. K. Sahu (Associate Professor) rksahu.mech@nitrr.ac.in	Smart Materials, Mechanical Characterisation, Electro Active Polymers, Composite Materials.	https://www.scopus.com/authid/detail.uri?authorId=55490447900
22.	 Dr. M. S. Rajput (Associate Professor) msrajput.me@nitrr.ac.in	Advanced Manufacturing Processes, Computer Aided Manufacturing, Rapid Prototyping, Automation & Virtual Instrumentation, Production Management.	https://www.scopus.com/authid/detail.uri?authorId=55919037600
23.	 Dr. R. S. Kumar (Associate Professor) rskumar.me@nitrr.ac.in	Solid Mechanics, Active Vibration control of Smart Structures, Micromechanical Modelling and Finite Element Modelling.	https://scholar.google.com/citations?hl=en&user=CzME5BMAAAAJ

24.	 Dr. S. Kumar (Assistant Professor) skumar.me@nitrr.ac.in	Welding and Joining, materials design, kinetic precipitation, rolling and forging, hotdeformation, Physical simulation, develop CCT and TTT diagrams for different grades of steels, FEM simulation, Structure-properties correlation of steels, Al, Ti, Ni based alloys, additive manufacturing.	https://scholar.google.com/citations?user=5DhRLjQAAAAJ&hl=en
25.	 Dr. A. Gupta (Assistant Professor) agupta.mech@nitrr.ac.in	Solid Mechanics, Analytical & Experimental Vibration Analysis of Intact & Cracked Isotropic, Orthotropic, & FG Plates & Shells (FFT Analyser & Laser Doppler Vibrometer). Vibration Analysis of Micro-plates (MEMS).	https://www.scopus.com/authid/detail.uri?authorId=56813866300
26.	 Dr. A. K. Shukla (Assistant Professor) akshukla.me@nitrr.ac.in	Computational Fluid Dynamics (CFD), Convective Heat Transfer, Thermal Sciences, Turbulence Modelling, Hybrid Turbulence Modelling, Simulation, Heat Transfer Enhancement, Reynolds-Averaged Navier–Stokes equations (RANS), Large Eddy Simulation (LES), Partially-Averaged Navier Stokes (PANS), (Scale Adaptive Simulation) (SAS), Automotive/EV Filtration and Clean Air.	https://scholar.google.com/citations?hl=en&user=KW_gR8QAAAAJ
27.	 Dr. K. S. Bal (Assistant Professor) ksbal.me@nitrr.ac.in	Laser beam and electron beam welding, Finite element modelling, Microstructural characterization of metals and alloys, Corrosion, Optimization.	https://www.scopus.com/authid/detail.uri?authorId=57202990026
28.	 Dr. Prem Kumar Chaurasiya (Assistant Professor) pkchaurasiya.me@nitrr.ac.in	Wind Energy, CFD, Fluid Mechanics, Thermal Energy	https://www.scopus.com/authid/detail.uri?authorId=57195670663

29.	 Dr. S.D.V.S.S Varma Siruvuri (Assistant Professor) sdvssvsiruvuri.me@nitrr.ac.in	Multiscale-multiphysics problems involving cracks, Computational mechanics, molecular dynamics and quantum mechanics simulations, and machine learning studies: applied to solar cells, Li-ion batteries, biomimetic structures, and composites.	https://www.scopus.com/authid/detail.uri?authorId=57216455978
30.	 Dr. Prashik Malhari Ramteke (Assistant Professor) pmramteke.me@nitrr.ac.in	Structural analysis of porous FGMs, Composites, damaged structures. Passport size photo is attached below.	https://www.scopus.com/authid/detail.uri?authorId=57213198750
31.	 Dr. Shashi Kant Verma (Assistant Professor) skverma.me@nitrr.ac.in	Computational Fluid Dynamics, Nuclear Fuel Rod Bundle, Computational Aeroacoustics, Extruder-Type Pellet Injector System, Hydrogen Ice extrusion, Turbulent Mixing, Aeroacoustics, Cryogenics	https://www.scopus.com/authid/detail.uri?authorId=57194639994

Research Facilities

S.No.	Research & Testing Facilities	Key Features of Equipment	Instrument Image
	Universal Testing Machine (10 kN)	Applications: Mechanical characterization of materials. Type of tests possible: Tensile, Compression, Relaxation and Creep test at room temperature.	

	Optical Microscope	Applications: Mechanical characterization of materials. Type of tests possible: Granular structure calculation, composite composition calculation, surface filler distribution imaging.	
	Modular Compact Rheometer (MCR 102)	Applications: Rheological characterizations of industrial process fluids/semi solids like Dairy, Chocolate, Pharmaceuticals, Food Products; Beverages, Pesticides, Paints, Mineral Slurries, Powder etc. Type of tests possible: Steady state rheology characteristics, Yield stress measurements, Stress relaxation measurement, Shear rate step-change measurement, Hysteresis loop, Thixotropy shear test, Oscilllaotry shear measurements.	
	Electric-discharge machine (Die-sinking)	Applications: Machining of various conductive materials used in Aerospace, Automobile and Tool & Die making industries. Stamping application like surface texturing, profile creation etc. of different shapes on the conductive material surface. Tool preparation for different applications Cutting of various conductive work specimens. Type of tests possible: Machining of various conductive materials; Stamping and Tool preparation & amp; cutting of different conductive materials.	

	Surface Roughness Tester	Applications: Portable Surface Roughness Tester (Surfcom Touch 50) allows surface roughness measurement both on metal and non-metal work pieces. Type of tests possible: Measurement of different roughness parameters like Ra, Rz, Rq, Rt, Rp, Rv, R3z etc. for on metal and non-metal workpieces having various surface profiles.	
	Vacuum Oven	Applications: It is used in drying and curing processes within industries such as pharmaceuticals, textiles, paper, ceramics, and rubber. Additionally, vacuum ovens form part of an important process for removing solvents from botanical extractions. Type of tests possible: Drying and Heating of Different Materials @ 200 C (Max.)	
	Hot Air Oven	Applications: It helps in the elimination of moisture from the material thus it is used in curing, drying, baking, and annealing. Type of tests possible: Drying and Heating of Different Materials @ 200 C (Max.)	
	MIG, TIG and SAW based welding machine & equipment	Applications: To perform the joining operation of metals for wide range of applications such as automobile, aerospace, pressure vessel, naval, structural industries. Type of tests possible: All type of joints (butt, V-, double V-, T-, Lap- and multi pass- joints, etc.) is possible by trained staff.	

			
	KD2 Pro Thermal Properties Analyzer	Applications: To measure the thermal properties of liquids and solid insulating materials. Type of tests possible: Measurement of Thermal Conductivity, resistivity, volumetric specific heat capacity and diffusivity.	
	Universal Testing Machine 200 (kN)	Applications: Mechanical characterization of materials Type of tests possible: Tensile strength, Compressive Test, Bend Test of different conductive materials.	

*****The details of testing and consultancy charges can be obtained from the office of Head of the Department of Mechanical Engineering.***

METALLURGICAL AND MATERIALS ENGINEERING

Head of the Department: Dr. Subhas Ganguly
Email: hod.mme@nitrr.ac.in
Contact: 09433396665

About the Department

The Department of Metallurgical and Materials Engineering was established in 1956. The department offers undergraduate program with 115 annual intakes and a doctoral program since 2012. The department comprises one Professor, five Associate Professors, six Assistant Professors, along with one temporary and one part-time faculty member. The department focuses on the synthesis, processing, and characterization of advanced materials, bridging fundamental science with engineering applications. The department is actively engaged in research areas such as nanomaterials, electronic materials, energy storage systems, and structural alloys. With a strong emphasis on both experimental and computational approaches, it aims to address real-world challenges in materials performance and sustainability. It also fosters industry collaboration and funded research to translate laboratory insights into practical technologies. Seventeen Ph.D. scholars have been awarded their degrees, and thirty are currently pursuing their doctoral studies. Funded research projects worth approximately Rs. 2 crores have been successfully completed, while ongoing projects account for nearly Rs. 3.5 crores. The department's faculty members have been granted eleven patents. The department has published more than 235 papers in indexed journals, conferences, and book chapters since 2012. Four international conferences and four national conferences, eleven workshops and four faculty development programs have been conducted since 2015. The department's advanced instrumentation supports testing requirements across multiple departments within the Institute, as well as neighbouring institutes in the state. Since 2014, the department has completed testing projects along with consultancy services amounting to approximately Rs. 1 crore.

Faculty Details

S. No.	Name of the Faculty	Key Research Areas	Research Link
1.	 Dr. Manoj Kumar Chopkar (Professor) mchopkar.mme@nitrr.ac.in	High Entropy Alloy, Nanofluid, Heat Transfers in Nanofluid, Solar and Fuel cell, Nanostructured Steel, Nanostructured and Amorphous Materials for structural application, Phase transformations (solid state), X-Ray diffraction, and Electron microscopy	http://www.scopus.com/authid/detail.url?authorId=14013073800
2.	 Dr. Manwendra K. Tripathi (Associate Professor) mktripathi.mme@nitrr.ac.in	Alloy Design for Electrochemical Hydrogen Production and Bio Medical Applications	http://www.scopus.com/authid/detail.url?authorId=56673638800

3.	 Dr. Subhas Ganguly (Associate Professor) sganguly.mme@nitrr.ac.in	Materials Data Science, AI/ML in Metallurgy, Adv. Materials, Alloy Design, Steel Microstructure, Friction Stir Processing	http://www.scopus.com/authid/detail.url?authorId=8512484600
4.	 Dr. Sanjeev Das (Associate Professor) sdas.mme@nitrr.ac.in	Material Processing, Advanced Solidification Technology, Foundry, Physical Metallurgy, Material Characterization, Mechanical Testing of Materials, Tribology, Metal Matrix Composites, Aluminium and Magnesium alloys.	http://www.scopus.com/authid/detail.url?authorId=7406323850
5.	 Dr. Manoranjan Kumar Manoj (Associate Professor) mkmanoj.mme@nitrr.ac.in	Thermodynamics, Heat-treatment, Welding, Tribology, Structure-property co-relation	http://www.scopus.com/authid/detail.url?authorId=57196756570
6.	 Dr. Sudip Kumar Sinha (Associate Professor) sksinha.mme@nitrr.ac.in	Structure property correlations for multicomponent alloys, Bio sensors, Gas sensors, Biomaterials	http://www.scopus.com/authid/detail.url?authorId=57200121071
7.	 Dr. Neha Gupta (Associate Professor) ngupta.mme@nitrr.ac.in	Additive Manufacturing, Metal Foams, Lattice Materials, functionally graded structures, High strain rate failure studies, Composite structures for defence and aerospace applications	http://www.scopus.com/authid/detail.url?authorId=57189757470

8.	 Dr. Ramavath Bheekya Naik (Assistant Professor) rbnaik.mme@nitrr.ac.in	Development and characterization of new composites. Mechanical, Wear and conductivity studies of composites. Solid state joining – friction welding and friction stir welding. Metal additive manufacturing using fusion based and solid-state technologies, Physical metallurgy	https://www.scopus.com/authid/detail.uri?authorId=57207730943
9.	 Dr. Mukesh Raushan Kumar (Assistant Professor) mrkumar.mme@nitrr.ac.in	Process metallurgy, Synthesis of new composites and its characterization, Development of lead free solder alloy and its characterization, Thin Film on HSS Steel, Surface coating, Corrosion studies, Thermodynamics Studies of Binary and multicomponent alloy	https://scholar.google.com/citations?user=6EH03EEAAAAJ&hl=en
10.	 Dr. Naga Sruthi Neelam (Assistant Professor) nsneelam.mme@nitrr.ac.in	Development and characterization of Titanium alloys for aerospace applications. γ-TiAlIntermetallics, High temperature behaviour of materials. Physical metallurgy. Structure – property correlation.	https://scholar.google.com/citations?user=Mbw8-wEAAAAJ&hl=en
11	 Dr. Bhargavi Rani Anne (Assistant Professor) branne.mme@nitrr.ac.in	Mechanical behaviour of materials, Process metallurgy, Electrochemistry,Electrocatalysts, Electrodeposition, Additive manufacturing, Electron microscopy, Advancedmaterials, Surface engineering.	https://scholar.google.com/citations?user=wo04lGQAAAAJ&hl=en
12	 Dr. Deependra Kumar Singh (Assistant Professor) dksingh.mme@nitrr.ac.in	Thin Film Deposition, 2D Materials, III-Nitrides, Metal Oxides, Photodetectors, Photocatalysis, Gas Sensors, Neuromorphic Devices, Lithium-ion Batteries, Supercapacitors	https://scholar.google.co.in/citations?user=kuWu01QAAAAJ&hl=en

13	 Dr. Abhishek Sharma (Temporary Faculty) abhishek.cnr@gmail.com	Optoelectronic materials and devices (LED and TFT), Solid-state physics, Oxide semiconductors, Display technology, Thin films	https://scholar.google.com/citations?user=NnTg0BEAAAAJ&hl=en
14	 Dr. Amit Kumar Yadav (Part-Time Faculty) amit.ydv1989@gmail.com	Metal Matrix Composites, Casting, Tribology, Mechanical Behaviour of Materials	https://scholar.google.com/citations?user=gULFbh4AAAAJ&hl=en

Research Facilities

S. No	Research & Testing Facility	Key Features of Equipment	Instrument Images
1	PANalytical 3 kW X'pert Powder XRD – Multifunctional	To determine structural properties: lattice parameters, strain, grain size, phase composition, preferred orientation.	
2	ZEISS EVO 18 MA s Scanning Electron Microscope with Oxford- Energy Dispersive X-ray system	High-resolutionmicrostrctures imaging and EDX can provide a specimen map by analyzing the types and quantity of elements at the surface or near the surface of the materials	

3	Instron 100 KN UTM with Automatic Extensometer	To find out how strong a material is and also how much it can be stretched before it breaks. This test method is used to determine yield strength, ultimate tensile strength, ductility, strain hardening characteristics, Young's modulus and Poisson's ratio.	
4	Ducom Wear Testing Machine	To characterize materials performance and determine how variations in materials structure can affect wear and friction.	
5	NETZSCH 404 Differential Scanning Calorimetry	Thermal analysis instrument that determines the temperature and heat flow associated with material transitions as a function of time and temperature.	

6	Swam Equip Stir Casting Machine	Liquid state manufacturing process for Metal Matrix Composite (MMC) material. Uniform mixing of reinforcement and metal matrix material is possible due to proper stirring during stir casting.	
7	Retsch Planetary PM-400 High Energy Ball Mill	Grinding sample material down to very small sizes	

8	Friction Stir Welding	Solid-state, avoiding many of the defects associated with melting and solidification during fusion welding, such as pores and solidification cracks	
9	Potentiostat	A potentiostat is an electronic instrument that controls and measures the potential of an electrode in an electrochemical cell.	
10	Semi-Automatic Micro Vickers Hardness Tester-with Software	The hardness is determined by measuring the depth of indenter penetration or by measuring the size of the impression left by an indenter.	

11	Vertical And Inverted Optical Microscopes for Advanced Routine Metallographic Investigation	To observ the Metal surfaceses at higher magnifications to obtaine the metallographic structure ranging from about 20 to 1000x.	
12	Polishing Machine for Metallography	Polishing metallographic specimens. The machine is equipped with cooling system that can cool down the specimen during pre-grinding so as to prevent overheating and damage the metallographic structure	
13	Digital Impact Testing Machine	To determine the resistance of a material or component to a rapid load under varying temperature conditions.	

14	ThermoFisher Scientific Evolution One UV-visible Spectrophotometer	A UV–Vis spectrophotometer measures the absorption of ultraviolet and visible light by a material as a function of wavelength. This absorption profile is used to determine concentration and gain insight into the material's electronic structure and transitions (wavelength range is 200-1100 nm).	
15	Vacuum Sintering Furnace (Carbolite Gero Ltd., UK; Model: TF1 16/60/300)	A tube furnace equipped with vacuum and gas flow control was used for high-temperature processing under controlled atmospheric conditions. The furnace operates at a maximum temperature of 1600 °C with a power rating of 4000 W. The system is integrated with a vacuum pump capable of achieving pressures up to ~10^{-2} mbar, enabling evacuation of the furnace tube prior to processing. Additionally, an argon (Ar) inert gas purging system is incorporated to create and maintain an oxygen-free environment during thermal treatment.	

16	Muffle Furnace (Carbolite Gero Ltd., UK; Model: CWF 11/05)	It is employed for high-temperature thermal treatments in an ambient atmosphere. The furnace is capable of reaching a maximum temperature of 1100 °C with a power rating of 2200 W. The insulated chamber design ensures uniform temperature distribution while preventing direct contact between the sample and heating elements. This furnace is suitable for applications such as general heat treatment, particularly where a clean and controlled heating environment is required.	
17	MBI W-3000 Handheld Fiber Laser Welding Machine	The MBI W-3000 handheld fiber laser welding machine is a high-power (≈3000 W) portable welding system that uses a focused fiber laser beam to produce precise, deep, and high-speed welds on metals like stainless steel, aluminum, and carbon steel. It offers excellent control, minimal heat distortion, and smooth weld quality, making it suitable for industrial fabrication, repair, and precision applications.	
18	Four Probe Setup (SES Instruments, DFP-RM-200N) with Sample Stage and Temperature Controller	The four probe method is a widely used technique for measuring resistivity using four collinear probes. It eliminates errors due to contact resistance by separating current and voltage probes, ensuring accurate measurements even when contact resistance is high. The pressure-contact setup also allows quick testing of different samples or regions (temperature controller range: ambient to 200 °C)	

*****The details of testing and consultancy charges can be obtained from the office of Head of the Department of Metallurgical and Materials Engineering.***

MINING ENGINEERING

Head of the Department: Dr. Pankaj Kumar Dewangan
Email: hod.min@nitrr.ac.in
Contact: +91-9826651855

About the Department

The Mining Engineering Department at NIT Raipur was first established in 1956. At present, the department offers B.Tech and Ph.D. programs in Mining Engineering. In addition to its academic programs, the Department provides testing and consultancy services to tackle real-time mining problems, including blasting technology, rock excavation, blast design and optimization, slope stability, waste dump slope stability monitoring, strata control, and monitoring plan, mine planning, mine ventilation, environment, occupational health, and safety at mines. The Department is also equipped to provide physio-mechanical testing of soil and rock. The Department is widely recognized in the industry for its strong reputation, which is built on years of service excellence and expertise. Our team of professionals and experts is dedicated to providing high-quality testing and consultancy services to clients across various industrial sectors.

The Mining Department's faculties possess exceptional qualifications and extensive industry experience, which has contributed greatly to the department's impressive strength. This team of instructors is highly respected within the industry and has a proven track record of success.

Faculty Details

S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 Dr. Manoj Pradhan (Professor HAG) mpradhan@nitrr.ac.in +91-9826540711	Blasting Engineering, Underground Coal Mining	https://www.scopus.com/authid/detail.uri?authorId=57194530621
2.	 Dr. Prem Sagar Mishra (Professor of Practice) psmishra.min@nitrr.ac.in +91-9002376001	Management & Sustainability	

3.	 Dr. P Y Dhekne (Professor) pdhekne@nitrr.ac.in +91-9669400678	Rock Mechanics, Strata Control, Blasting Engineering	https://www.scopus.com/authid/detail.uri?authorId=57192305296
4.	 Dr. Pankaj Kumar Dewangan (Professor) pdewangan.min@nitrr.ac.in +91-982665155	Rock Mechanics, Surface Mining, Ground Vibration study, Slope Stability	https://www.scopus.com/authid/detail.uri?authorId=57190189759
5.	 Dr. M D Patel (Associate Professor) mdpatel.min@nitrr.ac.in +91-9179359352	Acid Mine Drainage Treatment, Mine Ventilation, Underground Metal, Mining, Mine Environment	https://www.scopus.com/authid/detail.uri?authorId=57211402074
6.	 Prof. B R Parate (Associate Professor) bparate.min@nitrr.ac.in +91-9329768877	Mine Surveying, Mineral Engineering, Mine Environment	https://scholar.google.com/citations?hl=en&user=50kUlEwAAAAJ
7.	 Dr. Ravi K Jade (Associate Professor) rjade.min@nitrr.ac.in +91-7869481022	Ventilation, Environment, Acid Mine Drainage CFD, Geo-statistics, Computer Applications, Geomatics, Economic Analysis, Slope Stability	https://www.scopus.com/authid/detail.uri?authorId=55486099700

8.	 Dr. Ashish Kumar Dash (Associate Professor) akdash.min@nitrr.ac.in +91-9406148487	Mine Safety Engineering, Occupational Health and Safety, Risk-Based Accident / Incident Management System, Disaster Management	https://www.scopus.com/authid/detail.uri?authorId=56735657100
9.	 Dr. Vineeth Balakrishnan (Assistant Professor) vbalakrishnan.min@nitrr.ac.in +91-8823068228	Blating Technology, Slope Stability and Rock Mechanics, Mine Backfilling, Mine Planning and Application of AI/ML in mining.	https://www.scopus.com/authid/detail.uri?authorId= 57203241337
10	 Dr. Ashish Kumar Vishwakarma (Assistant Professor) akvishwakarma.min@nitrr.ac.in +91-9575144495	Rock Blasting, Underground Hard Rock Mining, Numerical Simulation, Statistical Analysis, Blast Vibration, Seismic Analysis, Machine and Transportation Induced Vibration	https://www.scopus.com/authid/detail.uri?authorId=57224087113
11	 Dr. Prudhvi Raju Gadepaka (Assistant Professor) prgadepaka.min@nitrr.ac.in +91-7382574292	Rock Mechanics and Strata Control, Numerical Simulation of mining structures, Stability analysis of underground mine	https://www.scopus.com/authid/detail.uri?authorId= 58450189400
12	 Dr. Maneeb Masood (Temporary Faculty) maneebmasood@gmail.com 9565148584	Use of Remote Sensing in Mining, Data Analysis, Mine Planning, Mine Surveying, Rock Slope Engineering	https://www.scopus.com/authid/detail.uri?authorId=58484834300

13	 Dr. Romil Mishra (Temporary Faculty) rmishra.min@nitrr.ac.in +91-9631083199	Blasting technology, Surface Mining Operations and Equipment, Data Analysis	https://www.scopus.com/authid/detail.uri?authorId=57202899629

The Department of Mining Engineering at NIT Raipur specializes in a broad range of areas, including Blasting Technology and Rock Excavation, Blast Design and Optimization, Slope Stability and Monitoring, Strata Control, Mine Planning, Mine Ventilation and Environment, Occupational Health and Safety at Mines. The department is equipped with a wide range of modern instruments and software to provide the industry with effective and suitable solutions. The Department of Mining Engineering offers comprehensive consultancy services to major stakeholders in the mining industry. Our clientele includes prominent organizations such as all subsidiaries of CIL, SAIL, NTPC, NMDC, MOIL, and Chhattisgarh State Mineral Development Corporation Limited, OMC as well as major private establishments like Ultratech, Adani, JSPL, JSW, JPL, Vedanta (BALCO), Ambuja, ACC, Birla Group, NUVOCO, GPIL (HIRA Group), TMC, Special Blasts Limited, Solar Group etc.

In addition, the department offers internship programs in various laboratories to enhance the skills of students. These programs are designed to provide practical experience and hands-on training to students, thus enabling them to gain a competitive edge in the industry. The entire curriculum is structured to ensure that students are exposed to the latest advancements in the field, which helps them to stay ahead of the curve.

The faculty members have generated internal revenue for the institute through testing, consultancy and research work worth over Six crore rupees in their professional capacities in last twenty years (excluding corona period). This is a testament to their expertise and professionalism in their respective fields. The Details are as follows:

S.No.	Subject Area	Name of the Expert (s)	Facilities or Equipment available	Some of the completed projects
1.	Blasting Technology and Rock Excavation	Dr. Manoj Pradhan, Dr. P Y Dhekne, Dr. Vineeth Balakrishnan, Dr. Ashish Kumar Vishwakarma	Seismographs (equipped with software), Wipfrag Software, VOD Mate	Scientific study to optimise blast design parameters to control ground vibration, air overpressure and fly rock at Hahaladdi Iron Ore Mine of M/S Mivaan Steels Limited Establishment of blast parameters and ground vibration predictor equation for Godadih Mahal No. 2 Limestone Mine Establishment of blast parameters and ground vibration predictor equation for Kesla Limestone Mine Scientific study for design of blast at Chhinda OCM, Pench Area, WCL Scientific study for designing a suitable blast design parameters for control blasting at Samleswari OCP, Ib Valley Area – Mahanadi Coalfields Limited. Study of ground vibration for optimum charge

				per delay- SouthEastern Coalfields Limited, Hasdeo Area. Assessment of Technical Feasibility of The Bulk Emulsion Explosive at the Mines of SAIL, Bhilai Steel Plant. Ground vibration study at Mainpat and BodaiDaldali bauxite mine, BALCO Korba - BALCO, Korba. Establishment of Ground Vibration Predictor Equation for Century Limestone Mine, Baikunth. Scientific study on trial blast with SME - Special Blast Limited. Controlled Blast Design for the Excavation at Kol Dam Hydro-Electric Project of NTPC
2.	Slope stability, waste dump slope stability and monitoring	Dr. Pankaj Kumar Dewangan, Dr. Manoj Pradhan, Dr. Vineeth Balakrishnan	Flac Slope, Flac 2D, and instruments for determination of physio-mechanical properties of soil and rock	Scientific study on stability of pit slope and waste dumps at Hahaladdi Iron Ore Mine of M/S Mivaan Steels Limited Study of environment friendly dumping of washery reject with OB dump at AEL PEKB Mine Site Parsa for FY 24-25 Scientific study for method of working and design of dump as per the provision in regulation no. 106(2) of CMR 2017 in Mahan II OCM, Bhatgaon Area - South Eastern Coalfields Limited, Bhatgaon Area. Slope stability study at MahamayaDulki Mines – SAIL, Bhilai. Scientific study for method of working as per the provision in regulation no. 106(2) of CMR 2017 - BALCO, Korba. slope stability study at Mainpat and BodaiDaldali bauxite mine, BALCO Korba - BALCO, Korba.
3.	Strata Control and Monitoring Plan (SCAMP) and Subsidence	Dr. Ashish Kumar Dash, Dr. Prudhvi Raju Gadepaka	Flac 3D, UDEC Software's and instruments for determination of physio-mechanical properties of rock	Design of Support system and preperation of strata control and monitoring plan (SCAMP) of proposed panel. Subsidence Study of Pathora West Coal Mine, Umaria, MP Scientific study for subsidence prediction of KurasiaUG Mine and Amadand Kewai UG mine of SECL, CIL Study and preparation of strata control and monitoring plan at NCPH Colliery- SECL. Study and preparation of strata control and

				monitoring plan at WCL - Trident AuroConstrium. Study and preparation of strata control and monitoring plan at Pandavpara Mine for contiguous seam- SECL
4.	Mine Environment and Ventilation	Dr. Ravi K Jade, Dr. P Y Dhekne, Dr. Ashish Kumar Vishwakarma	Ventsim Software, GIS Remote Sensing, Mini ambient air quality monitoring station, portable dust monitor	Scientific study for increasing the operational efficiency of MMV fan at Haldibari UG Mine, JKD Sub Area, Hasdeo Area, SECL Preparation of Drainage pattern of industries link to Ganga River basin & reporting the status of pollution from the industries - CG Government (Environmental Conservation Board, Raipur). Environmental audit and verification of compliance of EC and CTO at Godawari Power and Ispat Limited- GPIL (HIRA Group). Environmental audit for trial run of SID for production enhancement at Godawari Power and Ispat Limited- GPIL (HIRA Group). Inspection of Sand Mines to verify the compliance status of Environmental Clearance - CG Government (Environmental Conservation Board, Raipur).
5.	Rock and Soil Testing	Dr. Pankaj Kumar Dewangan, Dr. Ashish Kumar Dash, Dr. Vineeth Balakrishnan, Dr. Prudhvi Raju Gadepaka	Various equipment's for determination of physio-mechanical properties of soil and rock	Determination of Physio-mechanical properties on boreholes and rock samples – CMPDIL Nagpur. Determination of Physio-mechanical properties on boreholes and rock samples – CMPDIL Bilaspur. Physico Mechanical Test (PMT) of one Borehole w.r.t. Pathora East Coal Block. Determination of soil parameters of dump materials of various SECL mines – CMPDIL Bilaspur. Physico-mechanical Testing of rock samples of Kewra Coal Block – APC Drilling
6.	Fly Ash Compliance Audit	Dr. Manoj Pradhan	Authorized Auditor from CPCB	Fly ash compliance audit in various industries i.e. HIRA Group, Sarda Group, Singhal Group, Nuvoco Group, Vandana Group etc.

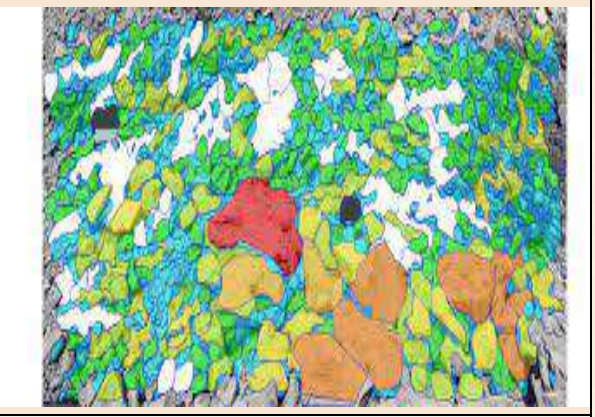
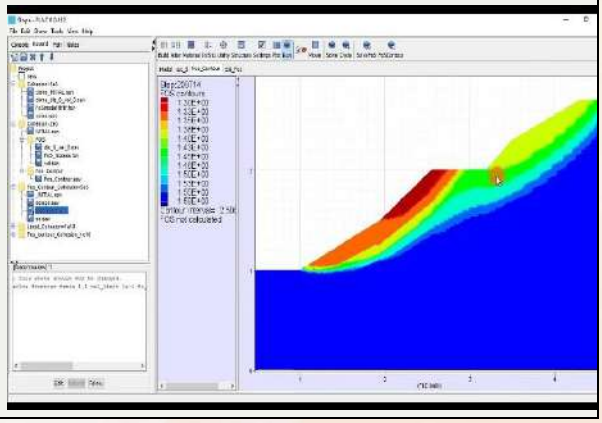
The Department of Mining Engineering is currently engaged in several research projects, in addition to its consultancy and testing activities. These projects are aimed at developing innovative solutions to the challenges facing the mining industry and are aligned with the department's mission to advance knowledge and understanding of mining engineering and promote sustainable development in the sector. As such, the department's research activities are of significant importance, and are a testament to its commitment to excellence. The ongoing research projects being undertaken by the department include:

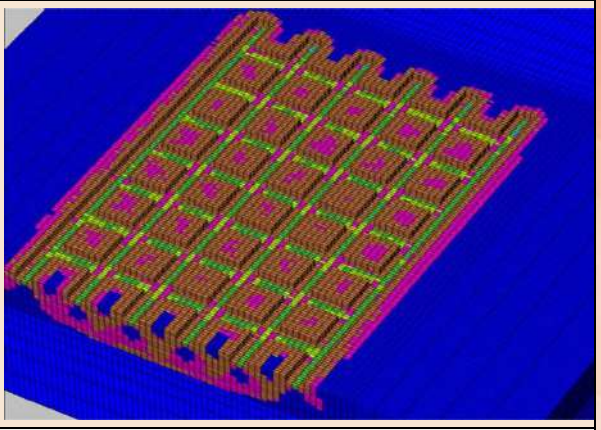
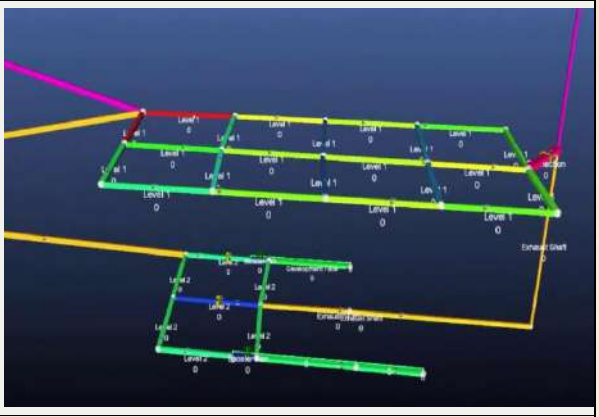
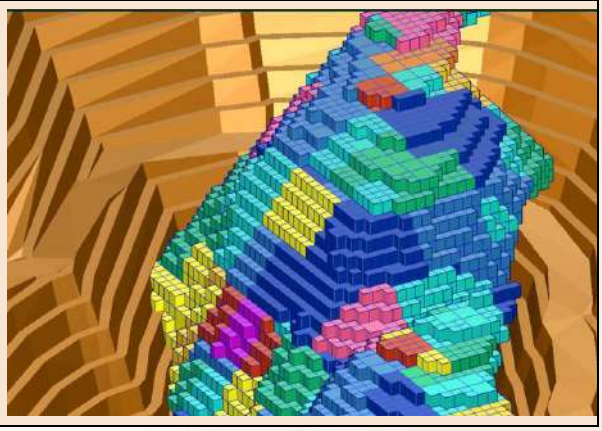
1. Feasibility studies on removal of contaminants from surface and ground water of Bailadilalron Ore Mine Project & peripherals – NMDC (Rs. 67 Lakhs) – Dr. P Y Dhekne, Principal Investigator
2. Techno-Economical Modeling and Analysis of Iron Ore Opencast Mining Operation of Rajhara Mechanised Mine – SAIL Bhilai (Rs. 10.36 Lakhs) – Dr. Ashish Kumar Dash, Principal Investigator, Dr. P Y Dhekne, Co-Principal Investigator
3. Development of A Model for Prediction of Production from A Continuous Miner Panel – TMC Minerals (Rs. 5.067 Lakhs) – Dr. Manoj Pradhan, Principal Investigator
4. A comprehensive study on the performance of Electronic Detonator in Opencast Mines-Godawari Power and Ispat Limited (Rs. 6.334 Lakhs)- Dr. Manoj Pradhan, Principal Investigator
5. Investigation into the Modalities for Handling and Disposal of Coal Washery Rejects as Prescribed by Statutory Bodies, Assessing its Practical Implications through a Sample Study of Coal Washery – Hind Energy and Coal Beneficiation Pvt Ltd (Rs. 6.615 Lakh) Dr. Ashish Kumar Dash, Principal Investigator
6. GreenWatch: Automated Violation Detection Green Compliance Framework for Mining Operations in Chhattisgarh" - IIT Bhilai Innovation and Technology Foundation (30.00 Lakh) Dr. Ashish Kumar Dash, Co-Principal Investigator

MoU's signed with various organizations

Sr. No.	Name of Organization	Objectives of Collaboration / MoU's
	Godawari Power and Ispat Limited (GPIL), HIRA Group	Sharing of the facilities Joint Research Project Skill Enhancement/Placement Assistance of Students Joint Academic Activities and Events
	TMC Mineral Resources Private Limited (TMC)	Long term collaboration between TMC Minerals and NIT Raipur in various areas of business, engineering and organization development for TMC by exchange intellectual strength of each
	CSIR - Central Institute of Mining and Fuel Research (CIMFR), Dhanbad	1. Academic and research collaboration in the areas of mutual interest 2. Joint - Supervision of B Tech, M Tech and PhD Works 3. Conduct of conferences, seminars, workshops and other academic meetings
	National Mineral Development Corporation (NMDC)	One R&D project "Feasibility studies on removal of contaminants from surface and ground water of Bailadila Iron Ore Mine Project and Peripherals" is going on
	Solar Industries India Limited, Nagpur	Recognizing the importance of research and development in the areas of mines & mineral sector Appreciating the need for creating of large reservoir of highly qualified manpower in all fields related to mines & mineral sector. Desiring to club their efforts by pooling their expertise and resources. Desiring to work jointly on the projects related to Drilling & Blasting.

Department is equipped with various modern instruments and software's to provide suitable and effective solution to the industry at a large. Department also offers internship program in various laboratories for skill enhancement. The details of equipment's and software's are as follows:

Research Facilities			
S. No.	**Research & Testing Facilities**	**Key Features of Equipment/ Software's**	**Instrument image**
•	Seismograph (Vibrometer) Ground Vibration Monitoring	Blast induced ground vibration monitoring, establishment of site specific predictor equation for calculation of maximum charge per delay, blast design	
•	Wipfrag Software	Analysis of fragmentation, design of blast, optimization of blast	
•	Flac Slope &Flac 2D Software	Slope stability analysis of opencast mine bench and dumps	

•	Flac 3D Software	Strata control and monitoring plan, stability analysis of gallery and pillar design, analysis of support plant etc.	
•	Ventsim Software	Design and optimization of mine ventilation network	
•	Surpac, Minex and Hexagon Software	Mine design, mine planning, ROM grade planning etc.	

•	Ultrasonic Pulse Velocity machine	Determination of P-Wave, S Wave, Possions Ratio and Youngs Modulus	
•	Mini Ambient Air Quality Monitoring Station and Portable Dust Monitor	Determination of PM100, PM10, PM2.5, SO2 and NO2 concentration in ambient air	
•	Universal Testing Machine 1	Determination of uni-axial compressive strength, Young's Modulus of Elasticity, Poisson's Ratio, single shear strength, double shear strength for rock samples (Physico-Mechanical properties of rock)	

•	Universal Testing Machine 2	Determination of uni-axial compressive strength, Young's Modulus of Elasticity, Poisson's Ratio, single shear strength, double shear strength for rock samples (Physico-Mechanical properties of rock)	
•	Triaxial Test Setup for Cohesion and Angle of Internal Friction	Tri-axial Compressive Strength for Rock (with cohesion and angle of internal friction with Mohr's Envelopes) (Physico-Mechanical properties of rock)	
•	Small Direct Shear Test Machine for Cohesion and Angle of Internal Friction	Determination Cohesion and Angle of Internal Friction (with Mohr's Envelopes) for soil samples (Physico-Mechanical properties of soil sample)	

•	Large Direct Shear Test Apparatus	Determination Cohesion and Angle of Internal Friction (with Mohr's Envelopes) for aggregates	
•	Brazilian Test Apparatus	Determination of tensile strength of rock sample (Physico-Mechanical properties of rock)	
•	Point Load Test Apparatus	Determination of uniaxial compressive strength of rock samples having irregular shape. (Physico-Mechanical properties of rock)	

•	Slake Durability Test Apparatus	Determination 1st cycle and 2nd cycle slake durability index (Physico-Mechanical properties of rock)	
•	Protodyknov Test Apparatus	Determination of unaxial compressive strength of coal or soft rock samples (Physico-Mechanical properties of rock)	
•	Proctor Compaction Test Apparatus	Determination of dry density, bulk density, optimum moisture content of soil sample	

•	Liquid Limit Test Apparatus	Determination of liquid limit of soil sample	
•	Volumetric Density Meter	Determination of dry density, bulk density of coal / rock samples (Physico-Mechanical properties of rock)	
•	Grinding Machine	Use for preparation of rock samples	

•	Core Cutting Machine	Use for preparation of rock samples	
•	VOD mate velocity of detonation meter	Determination of velocity of detonation of explosive	
•	Water Testing Kit	Determination of pH, Dissolved Oxygen (D.O.), Conductivity and TDS.	

•	UV Spectrophotometer	Determination of absorption of heavy metals in mine water.	
•	Gas Testing Chamber	Accumulation & Percentage test of mine gases.	

The details of testing and consultancy charges can be obtained from the office of Head of the Department of Mining Engineering.

MATHEMATICS

Head of the Department: Dr. Sujit Kumar Samanta
Email: hod.maths@nitrr.ac.in
Contact: 09131849701

About the Department

The Department of Mathematics was established in the year 1956 (formerly, the Department of Mathematics under the Government College of Engineering and Technology). The Department at present is one of the emerging departments, with a plethora of research and teaching endeavours in the subject areas of Algebra, Linear Algebra, Operations Research, Mathematical Ecology and Biology, Fluid dynamics, Cryptography, and Statistics. It offers two academic programs, M.Sc. and Ph.D. in Mathematics. It also takes care of mathematical input to all Undergraduate and a few Post-Graduate courses in Engineering and Computer Applications. At present, there are 12 regular and 04 part-time faculty members. The total number of ongoing and completed research projects is 22, and the total number of indexed publications is 476. The department also awarded 39 Ph.D. students till date and has 38 Ph.D. students at present. The department offers an outstanding research environment. The department has 22 projects completed/ongoing more worth Rs. 2.15 Crore. The research scholars of the department are well placed in academics on India through various competitive examinations and abroad as well. Several Ph.D. scholars have been awarded Chhattisgarh Young Scientist Award.

The Department of Mathematics has made significant contributions over the past decade in the fields of mathematics and statistics, particularly through computational and simulation studies. The detailed contributions include:

Cryptographic Boolean Functions:

- Investigation into high order nonlinearities of Boolean functions.
- Generalization of Boolean functions concerning cryptographic properties such as nonlinearity, transparency order, and nega-Hadamard transformation.
- Extension of cryptographic Boolean functions into areas such as image encryption and elliptic curve cryptography.

Image Encryption:

- Integration of cryptographic techniques with nature-inspired and chaotic behavior-based techniques for image encryption.
- Development of a chaotic-based image encryption scheme using elliptic curve cryptography and genetic algorithms.

Ecological and Epidemiological Modeling:

- Formulation of mathematical models for the conservation of degraded wetland ecosystems.
- Study of eco-epidemiology, including the interaction of susceptible, infected, and recovered populations.
- Implementation of delay differential equations for modeling interacting population dynamics and eco-epidemiological systems.

Linear Algebra:

- Advancement in the theory of numerical range and radius for tensors.
- Reproof of an existing lemma by relaxing its sufficient condition using the theory of Moore-Penrose inverse for operators, leading to several numerical radius inequalities.
- Establishment of reverse and forward order laws in a ring setting.

Statistical Methods and Data Science:

- Development of estimation procedures for various population parameters under non-response in successive sampling surveys.
- Application of Bayesian analysis for reliability and life testing under censored data.
- Cost estimation methods for population parameter estimation under imputation data scenarios.
- Data analysis and model implementation using **Python, R, and Excel programming** for real-world decision-making and risk prediction.

Biophysical and Biomechanical Modeling:

- Utilization of biophysical and biomechanical laws to construct mathematical and computational models mimicking the behavior of complex biological systems.
- Investigation into complex signaling mechanisms in pancreatic acinar cells, cardiac myocytes, and neurons.
- Modeling to identify possible sites for reactive oxygen species under patho-physiological conditions in pancreatic acinar cells, cardiac myocytes, and neurons.

Fluid Dynamics:

- Analysis of hydrodynamics resistance forces (drag and torque) for flows of incompressible viscous fluid past and within particles of various geometries in both unbounded and bounded mediums.
- Study of immiscible fluids including Newtonian-Newtonian, Newtonian-Non-Newtonian (Micropolar fluid), magnetohydrodynamics, Couple stress fluids, porous media, and thermophoresis.

Queueing Systems:

- Stochastic modeling and analysis of discrete- and continuous-time queueing systems, with particular emphasis on theoretical development and computational techniques.
- Research interests include queueing systems with server vacations; bulk and non-bulk arrival/service mechanisms; correlated arrival and/or service processes; fluid queueing models; and statistical inference for queueing systems, with a strong focus on computational and numerical aspects.

Rough Set and fuzzy Set:

- Validation of Mathematical modelling through Rough Set Theory.
- Prediction of behaviour of the system.
- Applications of Rough sets and fuzzy sets in real world problems.

Faculty Details			
S.No.	**Name of the Faculty**	**Key Research Areas**	**Research Link**
1.	 Dr. Arvind Kumar Sinha (Professor) aksinha.maths@nitrr.ac.in	Algebra, Rough and Fuzzy Set Theory, Mathematical Biosciences, Integral Transforms, Wavelets, Mathematical Modelling, Disease Dynamics, Nonlinear Dynamics	https://www.scopus.com/authid/detail.uri?authorId=57226623091
2.	 Dr. Debasisha Mishra (Professor) dmishra@nitrr.ac.in	Matrix theory, Generalized Inverses, Numerical radius	https://www.scopus.com/authid/detail.uri?authorId=36834031700
3.	 Dr. Sujit Kumar Samanta (Associate Professor) sksamanta.maths@nitrr.ac.in	Queueing Theory, Inventory System, Statistical Inference	https://www.scopus.com/authid/detail.uri?authorId=54989414100
4.	 Dr. Sharada Nandan Raw (Professor) sharaw.maths@nitrr.ac.in	Mathematical Modelling, Mathematical Ecology, Mathematical Biology, Eco-epidemiological Modelling, Disease Dynamics, Population dynamics, Nonlinear Dynamics and Chaos Theory, Differential Equations	https://www.scopus.com/authid/detail.uri?authorId =36612147500
5.	 Dr. M. Krishna Prasad (Associate Professor) madaspra.maths@nitrr.ac.in	Fluid Dynamics	https://scholar.google.com/citations?hl=en&user=2BoZMXoAAAAJ&view_op=list_works&sortby=pubdatehttps://www.scopus.com/authid/detail.uri?authorId=57189494499

6.	 Dr. Nilesh Kumar Thakur (Associate Professor) nkthakur.maths@nitrr.ac.in	Mathematical Ecology, Mathematical Modelling Nonlinear Dynamics	https://www.scopus.com/authid/detail.uri?authorId=36166021900
7.	 Dr. Deepmala Sharma (Associate Professor) deepsha.maths@nitrr.ac.in	Cryptography, Image Encryption, BioStatistics	https://www.scopus.com/authid/detail.uri?authorId=56126992800
8.	 Dr. Anup Kumar Sharma (Assistant Professor) aksharma.maths@nitrr.ac.in	Computational Statistics, Sampling Techniques, Bayesian Inferences, Machine Learning and Data Science	https://www.scopus.com/authid/detail.uri?authorId=57192067379
9.	 Dr. Neeraj Manhas (Assistant Professor) nmanhas.maths@nitrr.ac.in	Mathematical/Computational Physiology	https://www.scopus.com/authid/detail.uri?authorId=56189791100
10.	 Dr. Lavudya Bhaskar (Assistant Professor) lbhaskar.maths@nitrr.ac.in	Algebra, Fuzzy set theory and Fractal geometry	https://www.scopus.com/authid/detail.uri?authorId=57204051041

11	 Dr. Ranjan Kumar Das (Assistant Professor) Rkdas.maths@nitrr.ac.in	Numerical Analysis, Numerical Linear Algebra. Research Interest: Eigenvalue problem, Damping Optimization, and Tensor Analysis	https://scholar.google.com/citations?user=pqfQd7gAAAAJ&hl=en&oi=ao
12	 Dr. Nabin Kumar Meher (Assistant Professor) nkmeher.maths@nitrr.ac.in	Number Theory (Partition Theory, Analytic Number Theory, Modular forms and Transcendental Number Theory.)	https://scholar.google.com/citations?user=sgSYW0oAAAAJ&hl=en

Research Facilities		
S.No.	**Facility**	**Instrument Image**
1.	**Workstations :-**A high-end computing system tailored for individual users, boasting advanced graphics capabilities, substantial storage capacity, and a robust central processing unit, is referred to as a workstation. While offering greater capabilities than a personal computer (PC), workstations fall short of the sophistication found in server systems. These specialized computing platforms are primarily employed for tackling computationally demanding scientific and engineering endeavors. Additionally, they have gained traction in select intricate financial and business contexts.	 

*****The details of testing/consultancy charges can be obtained from the office of Head of Department of the Mathematics.***

PHYSICS

Head of the Department: **Dr. Sapan Mohan Saini**
Email: **hod.phy@nitrr.ac.in**
Contact: **09179193464**

About the Department

There are 6 regular, 2 temporary, and 7 part-time faculty members in the department. The Department offers Physics-based subjects for the B. Tech program. students from different engineering branches, along with M.Sc. and Ph.D. programs in Physics. The total intake in the M.Sc. program is 20. The department has more than 7 research projects (completed) and has produced more than 25 PhDs. The department has published more than 410 research papers in various journals, book chapters, and conference proceedings. The Department has completed testing and consultancy services valued at more than Rs. 203343.00 (FY-2025-26) for various industries in the Chhattisgarh C.G. region. Faculty and students have participated in various co-curricular and extracurricular activities. The Academic Audit has been completed. The department is appreciated for its research output.

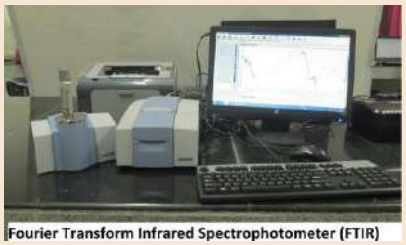
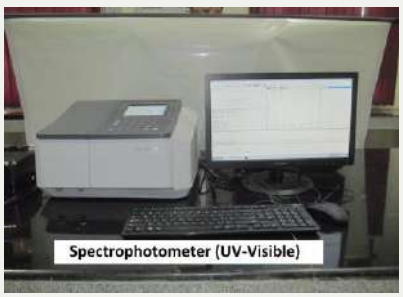
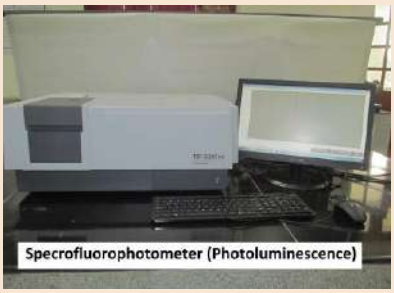
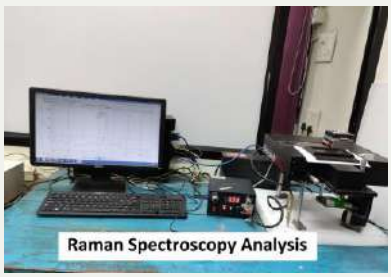
Faculty Details

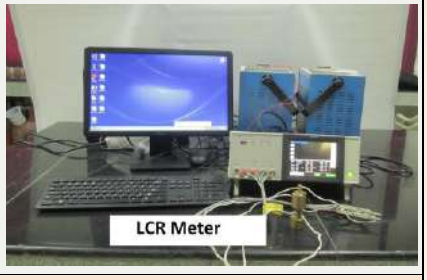
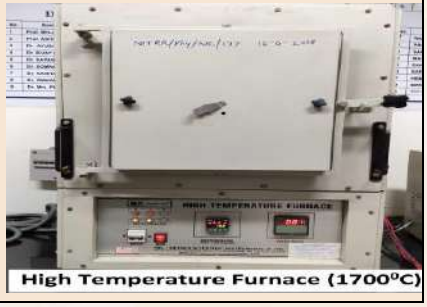
S.No.	Name of the Faculty	Key Research Areas	Research Link
1.	 Dr. Ayush Khare (Professor) akhare.phy@nitrr.ac.in	Nanophors, Inorganic and peroskite solar cells	www.scopus.com/search/form.uri?display=basic#basic
2.	 Dr B. K. Sahoo (Professor) bksahoo.phy@nitrr.ac.in	Optoelectronics and Spin-electronics	https://www.scopus.com/authid/detail.uri?authorId=56414347100
3.	 Dr. S. M. Saini (Professor) smsaini.phy@nitrr.ac.in	Band Structure and Thermoelectrics of Bulk and 2D Materials	https://www.scopus.com/authid/detail.uri?authorId=14623060200

4.	 Dr. K. S. Ojha (Assistant Professor) ksojha.phy@nitrr.ac.in	Semiconductor QDs and applications	https://www.scopus.com/authid/detail.uri?authorId=14623161800
5.	 Dr. Harikrishnan M.P. (Assistant Professor) harikrishnanmp.phy@nitrr.ac.in	Nanomaterials for Energy Storage Devices	Google Scholar: https://scholar.google.com/citations?user=r18961MAAAAJ&hl=en Orcid ID: https://orcid.org/0009-0003-0070-8578
6.	 Dr. CH Raju (Assistant Professor) craju.phy@nitrr.ac.in	Thermoelectric Materials and devices for power generation and cooling applications	https://scholar.google.com/citations view_op=list_works&hl=en&authuser=1&hl=en&user=KIasp1UAAAAJ&sortby=pubdate&authuser=1 http://www.scopus.com/inward/authorDetails.url?authorID=55828913500&partnerID=MN8TOARS https://orcid.org/0000-0003-1072-8241

Former Faculty Details			
1.	 Prof. Sadhana Agrawal (Professor, HAG) sagrawal.phy@nitrr.ac.in	Dielectric and optical properties of materials	https://www.scopus.com/authid/detail.uri?authorId=24287591000
2.	 Dr. A.K. Shrivastav (Professor) akshrivastav.phy@nitrr.ac.in	Luminescence	https://scholar.google.com/citations?user=KQcoUVwAAAAJ&hl=en&oi=ao

Research Facilities

S.No.	Research & Testing Facility	Key Features of Equipment	Instrument Images
1.	FTIR Spectrometer	An FT-IR spectrometer is used to obtain an infrared spectrum of absorption or emission of a solid, liquid, or gas. It simultaneously collects high-resolution spectral data over a wide spectral range. There are two set-ups: (i) transmittance unit works in the range 400-4000 cm^{-1} with KBr powder. (ii) ATR unit operates in the range 500-4000 cm^{-1}.	 Fourier Transform Infrared Spectrophotometer (FTIR)
2.	UV-VIS Spectrometer	A UV-VIS spectrometer measures the amount of ultraviolet (UV) and visible light that is absorbed by a sample. It is a widely used instrument in materials science, chemistry, biochemistry, and other fields, to identify and quantify compounds in a variety of samples. The operating wavelength range is 190 nm to 1100 nm.	 Spectrophotometer (UV-Visible)
3.	Spectrofluorometer	A spectrofluorometer is an instrument that takes advantage of the fluorescent properties of some compounds to provide information regarding their concentration and chemical environment in a sample. A certain excitation wavelength is selected, and the emission is observed either at a single wavelength, or a scan is performed to record the intensity versus wavelength, also called an emission spectrum. The operating wavelength range is 220 nm to 900 nm.	 Specrofluorophotometer (Photoluminescence)
4.	Raman Spectrometer	Raman spectroscope is an instrument typically used to determine vibrational modes of molecules, although rotational and other low-frequency modes of systems may also be observed. It is commonly used in materials science to provide a structural fingerprint by which molecules can be identified. The laser power in in the range 2 mW to 200 mW.	 Raman Spectroscopy Analysis
5.	TLD Reader	TL1009 is a versatile controller-based unit, facilitating the user to subject the TL sample under study to the desired heating profile, to record the digitized TL glow curve. This unit stores both integral value and digitized glow curve into EEPROM memory. This unit records the data in 150 channels, temp, TL intensity & Run time values. Entire electronics including PMT, HV bias, Temperature controller	 Thermoluminescence Reader/OSL Reader

		circuit, Heater transformer heater strip, sample drawer assembly, data acquisition electronics is all integrated into a single enclosure. The operating temperature is from room temperature to 500°C.	
6	AAA Solar Simulator	It is equipment employing a light source with a spectral distribution similar to the natural sunlight used to evaluate the characteristics of PV devices. Therefore, the solar simulator is an artificial light source that can generate or simulate sunlight with similar spectral distribution and light intensity. Various types of solar simulators are commonly used to determine PV devices' current-voltage (I-V) characteristics.	
7	Chroma Meter	The Chroma meter is a meter to measure color or technically a colorimeter. It is commonly used in food, cosmetics, chemicals, coatings, plastics, automotive interior and exterior color control and management.	
8	LCR Meter	An LCR meter is an instrument used to measure the inductance, capacitance, and resistance of a component, sensor or another device whose operation depends upon capacitance, inductance or resistance. It enables users to carry out electrical measurements of samples in pellet form.	
9	High-Temperature Furnace	The high-temperature furnaces enable users to synthesize their samples at very high (~1750°C) temperatures. Each furnace can simultaneously accommodate 06 crucibles.	

*****The details of testing and consultancy charges can be obtained from the following link:***

https://www.nitrr.ac.in/aboutphysics.php

https://www.nitrr.ac.in/downloads/TESTING%20AND%20CONSULTANCY/Testing%20and%20Consultancy%20Chgarges.pdf

Contact Head of the Department of Physics for further information.

WORKSHOP

Section Head: Dr. Shailesh Vaidya
Email: svaidya.ws@nitrr.ac.in
Contact: 09425437095

About the Department

The department was established in 1958. The department focuses on the theoretical and practical aspects of Manufacturing. The Workshop Practices Laboratory provides hands-on experience with the basic machining techniques and types of equipment in manufacturing environments. This includes turning operations, drilling, boring, basic milling, offhand grinding, precision grinding, Green sand mould, fitting, carpentry, and basic welding (SMAW, MIG, TIG, SAW facilities). These laboratories are divided into i.e., Machine Shop, Turning Shop, Carpentry Shop, Moulding Shop, Welding Shop, Electrical and Electronics shop and CNC shop.

The department likely provides a blend of classroom teaching, laboratory work, projects, and research opportunities to equip students with both theoretical knowledge and practical skills in the field of manufacturing.

Faculty Details

S.No.	Name of the faculty	Domain	Specialization
1	 Dr. Shailesh Vaidya (Workshop Superintendent) svaidya.ws@nitrr.ac.in	Industrial Engineering, Production and Total Quality Management	Industrial Engg., Management, Production Engg.

Staff Details

S.No.	Name of the Staff	Domain	Contribution
1	 Mr. Samund Goyal (Technical Assistant SG-II) sgoyal.ce@nitrr.ac.in	ITI in Instrumentation	Machine Shop

2	 Mr. Jagnuram Mandavi (Technical Assistant SG-II) jrmandavi.ws@nitrr.ac.in	ITI Welder	Fitting Shop
3	 Mr. Jaggumantri Sairam (Technical Assistant)	BE in Mechanical & Diploma	Turning Shop ,
4	 Mr. Umakant Verma (Sr. Technician) uverma.me@nitrr.ac.in	M.Sc. Maths & ITI Fitter	Material Processing and Advance Manufacturing Lab, Fitting shop, CNC Shop
5	 Mr. Manoj Kumar Patle (Laboratory Assistant) mpatle.mech@nitrr.ac.in	BE in Mechanical & Diploma	Welding and CNC shop
6	 Mr. Ripusudan Lal Sahu (Technical Assistant Contract)	ITI Turner	Moulding Shop
7	 Mr. Santosh Kumar Dewangan	ITI Fitter	Carpentry Shop

	(LA Contract)		
8	 Mr. Meghraj Dewangan (AG-IV Contract)	ITI Turner	Supporting Staff

Manufacturing Facilities

S.No.	Machine name	Key Features of Equipment	Image
Machine Shop			
1.	Shaper Machine	Machining horizontal, vertical, irregular, inclined surfaces, cutting grooves, gears, spline shaft	
Turning shop			
2.	Center Lathe Machine	Plain turning, step turning, tapering, drilling, reaming, boring, thread cutting, knurling facing, chamfering, parting off	
CNC			
3.	CNC Lathe Machine	turning, step turning, tapering, drilling, reaming, boring, thread cutting, knurling facing, chamfering, parting off	

4.	CNC Milling Machine	Machining vertical, irregular, inclined surfaces, cutting grooves contour generation and pocket milling.	
5.	CNC Milling Trainer Machine	Machining vertical, irregular, inclined surfaces, cutting grooves contour generation and pocket milling.	
6.	CNC Lathe Trainer Machine	turning, step turning, tapering, drilling, reaming, boring, thread cutting, knurling facing, chamfering, parting off	

Welding shop			
7.	MIG Welding Machine	Lap, butt, corner, T joints on mild steel, carbon steel, nickel steels.	
8..	TIG Welding Machine	Lap, butt, corner, T joints on stainless steels, nickel steels.	
9.	Submerged Arc Welding Machine	Lap, butt, T joints on thick stock of steels.	

CENTRAL COMPUTER CENTRE

Head of the Department: Dr. Rakesh Tripathi
Email: headccc@nitrr.ac.in
Contact: 09340105510

About the Centre

Central Computer Center (CCC) is the nodal agency and engine for propelling ICT Infrastructure Development, Maintenance and Growth at NIT Raipur. On this front CCC has planned, designed, implemented, optimized, and is operating and maintaining the ICT Infrastructure pertaining to the Campus Wide Wired Network, the Campus Wide WiFi Network, the Campus Wide Telephony Network, the Campus Network Security, the Advanced Computing Facility, the Campus Hosting Services, the Campus Wide Software Licensing, the Central Computer Center and importantly the Institute Data Center.

CCC is also engaged in Software Development Works towards various internal application requirements of the Institute. Here, the CCC has developed and tested in-house the Institute Website, the Faculty Recruitment Application, Online application for PH.D. admission, scrutiny, and the Online Entrance Examination Application for the same, among others. It is also running an Institute Directory Service which is used for Internet Access Authentication and a Webcasting Service for Webcasting Video Streams. CCC is also managing the Institute Email Application.

Member and Staff Details

S.No.	Name of the Members and Staff	Key Working Areas
1.	 Dr. Rakesh Tripathi (Head, CCC) headccc@nitrr.ac.in	Performance analysis of Communication Networks, Data Center Networks, Game Theory and Optimization, Distributed Algorithms, Named Data Networking (NDN), Internet of Things (IoT), Blockchain.
2.	 Dr. Tripti Swarnkar (Member, CCC) tswarnkar.mca@nitrr.ac.in	Machine Learning, Deep Learning, Medical Omics Data and Image Data Analysis

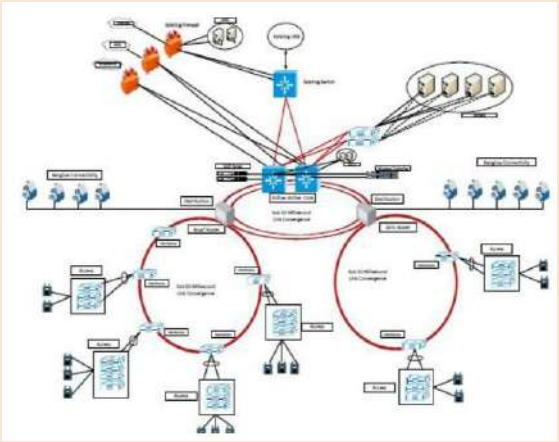
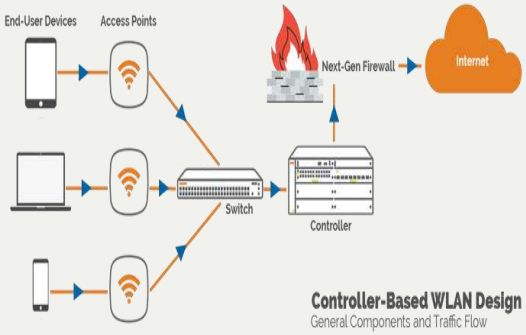
3.	 Dr. Dilip Singh Sisodia (Member, CCC) dssisodia.cs@nitrr.ac.in	Applications of Machine Learning and Soft Computing Techniques, Artificial Intelligence Computational Intelligence , Biomedical Image/Signal Processing, Theoretical Computer Science
4.	 Dr. Siddharth Deshmukh (Member, CCC) sdeshmukh.ece@nitrr.ac.in	Statistical Signal Processing, Optimization theory, Wireless Communication, Cyber Physical Systems
5.	 Dr. Ravindra Chouhan (Sr. Technical Officer) rchauhan@nitrr.ac.in	Network & Server Administration, Secure IT Infrastructure, SDN & Cybersecurity, Data Science & AI Applications, IoT Systems, and Enterprise Software Development
6.	 Mr. Krishna Kumar (Technical Assistant) kkumar.ccc@nitrr.ac.in	Embedded System Design, Medical Devices, Deep Learning, Internet of Things, Data Science, Artificial Intelligence and Machine Learning.
7.	 Mr. Abhishek Kumar Dewangan (Technical Assistant) adewanagan.ccc@nitrr.ac.in	Web Application Development, System Management, Virtualization, Media Streaming, Information Security

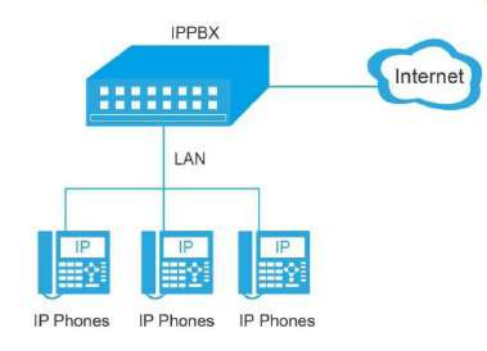
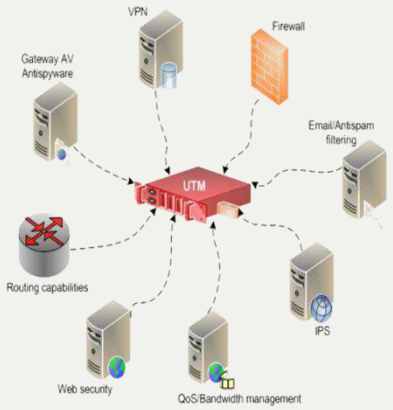
8.	 Mr. Mukesh Panday (Trainee Engineer) mukeshpnd02@gmail.com	Manage of institute's official email service and employee profiles, hosting and management of institute website ,support in live webcasting service.
9.	 Mr. Bhagchand Verma (Trainee Engineer) bverma9098@gmail.com	Installation and support of the physical computer infrastructure (hardware, systems software, networks, and backup systems), Troubleshoot issues within the data center and physical infrastructure, Virtualization.
10.	 Mr. Ravikant Sahu (Trainee Engineer) r.ravi10109@gmail.com	Web application development in MVC architecture on Linux platform, Manage of LDAP software profiles , Development and Maintenance of Software Applications
11.	 Mr. Ashok Dewangan (Technician(Daily Wages))	Maintenance of electrical-related issues.
12.	 Mr. Ishwar Prasad (Trainee Technician-I) ishwarprasadsinha786@gmail.com	Maintain data center and environmental facilities including but not limited to UPS, backup generator power, fire prevention systems, and HVAC , electrical-related issues.

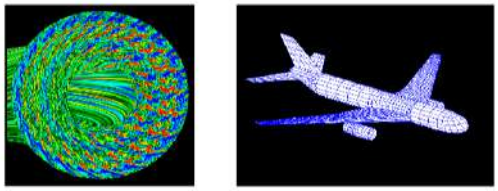
13.	 Mr. Lomesh Kumar Sahu (Trainee Technician-I) lomesh.sha@gmail.com	Installation and support of the physical computer infrastructure (hardware, systems software, networks, and backup systems), support of Development and Maintenance of Software Applications
14.	 Mr. Vikas Kumar Mahato (Trainee Technician-II) metalcraze07@gmail.com	Manage of Computer Lab and Classroom Cum Computer Labs namely CLC1, CLC2, CLC3, CLC4 of CCC and maintain all the systems therein like Projector, Audio System, Electronic Boards.
15.	 Mr. Jeetendra (Trainee Technician-II) jitendraparashar5050@gmail.com	Troubleshooting of PCs including accessories like Webcams and Headsets for successful conduction of Online Exam for TPO.
16.	 Mr. Sonu (Trainee Technician-II) sonuramjangde98@gmail.com	Troubleshooting of Network Field Issues, Management of Computer Center Building infrastructure like Monitoring Displays, Fire related, Surveillance Cams
17.	 Ms. Tarini Dewangan (Trainee Office Assistant) tarinidewangan000@gmail.com	Filing, Indexing, Cataloguing and Management of Department Documents.

18.	 Mr. Pokhraj Sahu (Trainee Multi Tasking Staff) pokhrajs42@gmail.com	Movement of the files ,Maintain and ensure regular cleaning and hygiene of CCC equipment, classes, labs, staff rooms, corridors, rooms, etc at different locations, Different works of CCC as and when assigned.

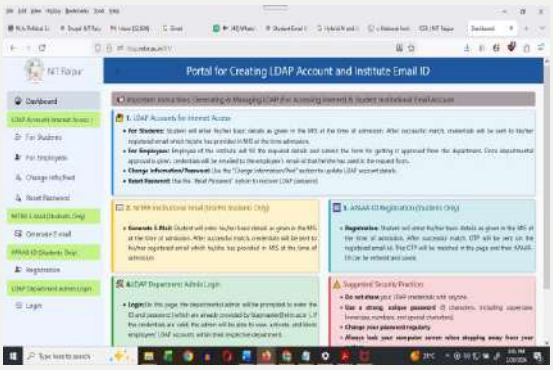
Research Facilities

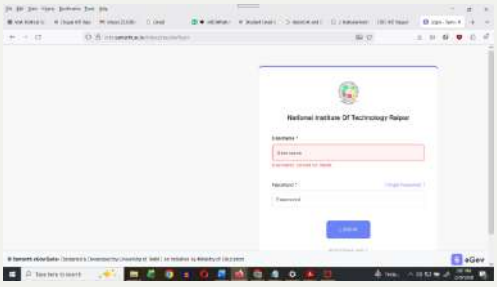
S.No.	Research & Testing Facility	Key Features of Equipment/Systems	Architectures and / or Systems
SYSTEMS AND NETWORKS DIVISION			
1.	Campus Wide Wired Network	The campus wide Wired LAN encompasses the entire institute and provides a primarily gigabit converged network to • All the departments, • Centres • Boys and girls student hostels and staff residences. Network Core Feature: • 20 Gbps fiber optic primary backbone upgradable to 40 Gbps • Recovery time of 50ms in the event of a fiber-cut. • The campus core is highly available with 160 Gbps dynamic failover.	
2.	Campus Wide Wireless Network	The campus wide wireless network is • Based on a centralized WiFi controller and WiFi access points • The WiFi access points seamlessly integrate with the WiFi controller. • The different parameters of the WiFi access points can be centrally tuned using the WiFi controller. • The access points in the institute are mostly dual-band and are based on the IEEE 802.11ac standard.	

3.	Campus Wide Telephony Network	• The campus telephony is based on an IP-based Private Branch Exchange (IP-PBX). • The IP-PBX system provides internal communication inside the campus through telephony extensions. • Provisions are also in place to connect these extensions to the public switched telephone network (PSTN).	
4.	Campus Network Security	• Incoming and outgoing network traffic is monitored for information security reasons at the gateway of the institute network using what is referred to as a next generation firewall or a Unified Threat Management, i.e., UTM Device. • This UTM performs the following standard roles related to information security of the campus network. ○ Network Firewall ○ Network Intrusion Detection System ○ Network Intrusion Prevention System ○ Gateway Antivirus ○ Web and Application Content Filtering ○ Data Leak Prevention ○ Virtual Private Network The UTM device is configured in High Availability Active-Active Configuration.	
5.	Data Center Facility	Specially designed and engineered controlled environment facility whichhouses and maintains NIT Raipur's back-end information and communication technology (ICT) systems and data stores including its compute, storage, communication, servers, databases, etc. The datacenter at NIT Raipur houses • ICT equipment racks including server and network racks. • UPS backup for the rack mounted equipment. • DG and Voltage Stabilizer • Cooling system based on green and sustainable technology. • Fire safety is ensured by audio-visual alarms and fire suppression systems.	

		• CCTV surveillance. • Critical alerts etc. • The data center is designed to function round the clock and provide a failsafe and secure place for ICT equipment running several useful applications for NIT Raipur's user base of around 7000.	
6.	Advanced Computing Facility (ACF)	• Advanced platforms for research and education in advanced disciplines like Computational Science and Engineering and Big Data Analytics. • The HPC cluster comprises of one master and fifty four compute nodes. • The supercomputer uses a fat tree network with 100Gbps bandwidth. • The CPU Rmax performance is 39.5 TFLOPS. • The HPC System can be used in the Institute for ▪ Climate Modeling ▪ Weather Prediction ▪ Seismic Analysis ▪ Quantum Mechanical Simulations ▪ Astrophysical Simulations ▪ Computational Fluid Dynamics ▪ Computational Solid Mechanics ▪ Computational Engineering Mechanics ▪ Computational Electromagnetics ▪ Computational Biology ▪ Molecular Dynamics ▪ Computational Chemistry ▪ Computational Drug Discovery ▪ ComputationalMaterials Science and Nano- materials ▪ Processing of Massive Datasets ▪ DeepLearning AI etc.	  Figure: (a) Plasma Turbulence Simulation in a Tokamak (b)Wind Blast Loading FEA Simulation during Normal Operation

7.	Campus Hosting Services	• Secured Access • Periodic manual monitoring • Air-conditioned Environment • Rodent Repellant System • Periodic CCTV based Remote Monitoring • Sufficient power for all installed equipment • Uninterruptible Power Supply (UPS) to protect against power anomalies • Battery backup and standby generators to maintain normal operations during a utility outage • Pre-existing, standard 19-inch racks with full cable management • Prototyping services • Installation services	
8.	Campus Wide Software Licensing	The Campus Wide Software Licensing allows access on Institute owned computers to all faculty, staff and students. They are also able to install the software on their personally owned computers.	
9.	Computer Lab in Central Computer Center	General Purpose Individual Computing, Accessing Computational Resources and Digital Learning Content available on the Intranet, Internet, and for Computer Based Testing purpose etc. 240 desktops for use by its students, faculty and staff and has following Spec: • 3.1 GHz quad-CPU and 6 GPU cores, • 8 GB RAM and 1 TB HDD • Open Source Linux OS • 19.5 inch Monitor • Webcam	
10.	Computer Lab Classrooms in Central Computer Center	Total 4 CLCs designed for Instructor-Led Hands-On Software Training Sessions involving Live Demonstrations and each of them is furnished with • Projector, • Electronic Whiteboard, • Public Address System, etc. to facilitate such training programmes. The four CLCs in the Center house 160+ desktops for use by the students, faculty and staff.The building is Centrally Air Conditioned and has UPS and Generator Power Backup.	

		Spec of CLC3 • 3.5 GHz quad CPU, • 8 GB RAM and 1 TB HDD • Windows 10 OS. Spec of remaining CLCs: • 3.1 GHz quad-CPU and six GPU cores, • 8 GB RAM and 1 TB HDD • Open Source Linux OS • Webcam	
11.	Campus Electronic Directory Services	The directory services provide the user authentication for internet access in the institute All the user can update and create there id from the directory services	
12.	Campus Electronic Mail	The institute mail server is managed by the web application development team It includes user creation, password reseting, user deletion and other mail related issues.	
13.	Software Applications	In-house Development and Management of following Web Applications: 1. Website 2. NIMCET Application 3. Faculty Recruitment Software 4. PhD admission & CBT Software 5. CSR 6. Integrated Payment Gateway 7. Faculty Profile 8. Department Internet User Management	
14.	Web Services	1. File Server 2 Manage of LDAP and DNS servers 3. support in live webcasting service. 4. Webcasting Service	

15.	ICT Support Infra	1. Regular backup of critical applications and databases, implementation of security policies 2. access control, and monitoring against cyber threats. Technical Support to Companies during Placement	
16.	Samarth Module	1. Faculty Recruitment with scrutiny 2. Complaint Management System	

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The Central Library of NIT, Raipur is a Fully Automated modern Library with Web-centric LIBSYS10 software on the cloud. It offers Web OPAC services to its users. The central Library uses Barcode and RFID Technology for Circulation and Reference services. It has a good collection of print resources, including more than 1 lakh of books, about 59 periodicals, 16 Newspapers, and 646 Ph.D. Theses. Keeping pace with the technological advancement and demands of users, the Central Library has developed its e-resource collections since 2010. At present it has rich collections of e-resources in terms of types and numbers of e-resources which includes 53121 purchased e-books, more than 1.7 lacs subscribed e-books, Online Journal Achieve collections of Elsevier and Springer nature Journals, and more than 91000 online Springer protocols.

Regarding subscription to online journals, 32 numbers of online journals are provided through Govt. Of India through "ONOS," consisting of more than 13257 full-text e-journals, and a yearly subscription to the Springer Materials online database and the SCOPUS bibliographic database from institutional funds. Also, LeapSpace (ScienceDirect AI), Grammarly for Education software, Turnitin Feedback Studio (anti-plagiarism software), etc., are subscribed to by the Central Library. All resources are accessed through IPs of NIT Raipur without any user ID and Password. For users residing outside the NIT campus, the Central Library provides MyLOFT Remote Access Facilities to access e-resources from their own locations. The Central Library is fully Air-conditioned with Wi-Fi facilities. The Central Library is a member of National Digital Library of India(NDLI), ShodhGanga Ph.D theses repository, Indian Research Information Network System(IRINS) etc. To keep users aware of the use of various e-resources and services, and to support quality research and research publications, the Central Library organizes many user training programs, seminars, workshops, and Author workshops every year in collaboration with reputed publishers. With variety of library resources and services, the Central Library has been able to caters the information and document need of nearly 6000 users consisting of Faculty members, staff, B.Tech/M.Tech/MCA students and research scholars satisfactorily.

List of Professional Staff

S.No.	Name	Designation	Contact No. / E-mail
1.	 Dr. Sunil Kumar Satpathy	Deputy Librarian & Head	9977508422 sksatpathy.lib@nitrr.ac.in
2.	 Mr. Ajay Kumar Sharma	Asst.Librarian	9424223778 aksharma.lib@nitrr.ac.in

3.	 Dr. Neelam Soni	Assistant Librarian	9302805233 nsoni.lib@nitrr.ac.in

LIST OF LIBRARY RESOURCES

1. Print Books (General Library)-90627
2. Print Books (Textbook Bank) –37131
3. No of Print Periodical- 59
4. No. of Newspapers-16
5. E-Books- Purchased -53121, Subscribed-1.7 Lacs +
6. No of Full text E-journals /database -34
7. Bibliographic & Indexing databse-01(SCOPUS)
8. No of Online Protocols- 91074 +
9. Online Journal Archive-870
10. Plagiarism software-01 (Turnitin Feedback Studio)
11. Remote Access service-01 (MyLOFT)
12. Grammarly for Education-01
13. LeapSpace(Science Direct AI)

SERVICES PROVIDED BY THE CENTRAL LIBRARY

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4. Digital library service for accessing subscribed online resources
5. Photocopy services
6. Document Delivery service through e-mail.
7. Plagiarism check
8. Grammar check
9. Uploading Ph.D. Theses in ShodhGanga Portal
10. IRINS service
11. Remote Access Service
12. Web OPAC service
13. Users' education services through Training programs, seminars, author workshops



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