

Department	Mechanical Engineering
Designation	Assistant Professor Grade II
Education qualification	Ph.D.
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Date of birth	23 rd May, 1990
Address	(Home) Vakalapudi, Kakinada, Andhra Pradesh -533005. (Current) Mohaba Bazar, Raipur, Chhattisgarh - 492010.

Areas of interest
Multiscale - multiphysics problems involving cracks, computational mechanics, molecular dynamics & quantum mechanics simulations, and machine learning studies: applied to solar cells, Li-ion batteries, biomimetic structures, and composite structures.

Skill set
Molecular dynamics simulations - LAMMPS, Quantum mechanics simulations - Quantum Espresso, MATLAB programming, Python programming and machine learning, COMSOL - Multiphysics, Multi-scale studies, Continuum modelling a multi-physics problem, Inkscape and Latex

Work experience			
<u>Teaching</u>			
Employer	Designation	Job Nature	Time period
N.I.T Tadepalligudem, A.P	Ad-hoc faculty	Teaching, Research	July'2023 to Jan'2024
N.I.T Tadepalligudem, A.P	Ad-hoc faculty	Teaching	July'2018 to Dec'2018
GITAM University, Vizag, A.P	Assistant professor	Teaching	Aug'2014 to April'2016
VIGNAN University, Guntur, A.P	Assistant professor	Teaching	Aug'2013 to Aug'2014
<u>Research</u>			
I.I.T Bhubaneswar, Odisha	Research scholar	Research	Jan'2019 to July'2023
<u>R&D</u>			

D.R.D.L, Hyderabad

M. Tech scholar

R&D

June'2012 to June'2013

Administrative

1. 'Faculty Coordinator' for II B. Tech Mechanical class, NIT Andhra Pradesh, July'23 – Jan'24.
2. 'Time-table in-charge', Mechanical Engineering Department, NIT Andhra Pradesh, Dec'23 – Jan'24.
3. 'Student Counsellor' while working in VIGNAN and GITAM deemed universities.

List of publications

1. **SDVSS Varma Siruvuri**, and PR Budarapu, (2020), Studies on thermal management of Lithium-ion battery pack using water as the cooling fluid. *Journal of Energy Storage*, 29, 101377. (<https://doi.org/10.1016/j.est.2020.101377>, SCIE, impact factor: 9.4)
2. **SDVSS Varma Siruvuri**, PR Budarapu, and Marco Paggi. (2021), Current-voltage characteristics of Silicon based solar cells in the presence of cracks: MD simulations. *Semiconductor Science and Technology*. (<https://doi.org/10.1088/1361-6641/ac3374>, SCIE, impact factor: 2.048)
3. **SDVSS Varma Siruvuri**, H Verma, B Javvaji, PR Budarapu, (2022), Fracture strength of Graphene at high temperatures: data driven investigations supported by MD and analytical approaches. *International Journal of Mechanics and Materials in Design*. (<https://doi.org/10.1007/s10999-022-09612-x>, SCIE, impact factor: 3.561)
4. **SDVSS Varma Siruvuri**, KR Mangipudi, P.R. Budarapu, (2023), A coupled quantum-molecular mechanics approach for performance analysis of defective Silicon based photovoltaic solar cells. *Physica Scripta*. (<https://doi.org/10.1088/1402-4896/acb6be>, SCIE, impact factor: 3.081)
5. **SDVSS Varma Siruvuri**, PR Budarapu, M Paggi (2023), Influence of cracks on Fracture strength and Power loss in Silicon solar cells at high temperatures: Molecular dynamics and Machine learning studies. *Applied Physics A* (<https://doi.org/10.1007/s00339-023-06629-7>, SCIE, impact factor: 2.983)
6. **SDVSS Varma Siruvuri** (2023), Failure analysis of Silicon solar cells in the presence of cracks - correlated to partial shading. *Journal of Failure Analysis and Prevention*. (<https://doi.org/10.1007/s11668-023-01786-6>, ESCI, impact factor: 1.2)
7. H Verma, **SDVSS Varma Siruvuri**, PR Budarapu, (2024), A machine learning based image classification of Silicon solar cells. *International journal of Hydromechatronics*. (<https://doi.org/10.1504/IJHM.2024.135990>, ESCI, impact factor: 5.1)

Conferences

1. **SDVSS Varma Siruvuri**, PR Budarapu (2019), Studies on influence of cracks on the performance of photovoltaic solar cells: MD simulations, Indian Society of Theoretical and Applied Mechanics (ISTAM)-2019, 09-11, December, 2019, Indian Institute of Technology, Bhubaneswar, Odisha-752050.
2. **SDVSS Varma Siruvuri**, KR Mangipudi, PR Budarapu (2022), Coupled QM/MM studies on Graphene deposited Silicon based photovoltaic solar cells in the presence of cracks, World Congress on Computational Mechanics & Asian Pacific Congress on Computational Mechanics (WCCM-APCOM), 31, July, 2022, Yokohama, JAPAN.
3. **SDVSS Varma Siruvuri**, P.R. Budarapu (2023), Multiphysics analysis of Photovoltaic solar cells, 15th International Conference on Fracture, Atlanta, Georgia USA, 11-16 June 2023.

Education



Ph.D. (Silicon solar cells)	Jan, 2019- July, 2023	I.I.T Bhubaneswar, India	9.27 (coursework)
M. Tech (Product Design and Development)	2011-2013	National Institute of Technology, Warangal, India	8.5
B. Tech (Mechanical Engineering)	2007-2011	University College of Engineering, JNTU Kakinada campus, India	76.22
Class XII	2005-2007	Aditya Junior College, Kakinada	96.00
Class X	2004-2005	Sarwani Vidyanikethan, Kakinada	87.50

Academic theses (titles)

Ph.D.	Performance studies on Silicon based solar cells in the presence of cracks
M. Tech	2D Tolerance Analysis of LRM using Vector Loop Based Method
B. Tech	Simulation of flow of water over a wall-mounted cube

Other information

Achievements:

1. Achieved a ranking within the top 1.05% in the 2007 EAMCET engineering entrance exam in Andhra Pradesh and joined B. Tech in Mechanical Engineering, JNTU Kakinada University campus, 2007-11.
2. Achieved a ranking within the top 2.3% in the 2011 GATE exam and joined M. Tech in Product Design and Development, NIT Warangal, 2011-13.

Extracurricular activities:

1. Active cricket and badminton player during B. Tech in J.N.T.U Kakinada
2. Institute champion of badminton sport - SINGLES and DOUBLES conducted during Feb-Mar'2021 in I.I.T Bhubaneswar campus.
3. Stood as player of the tournament / one of the top three players in cricket sport conducted during INTER SCHOOL SPORTS MEET - July'2022, and INTER YEAR SPORTS - Sep-Oct'2022 in I.I.T Bhubaneswar campus.