

UDBHAV VISHWAKARMA

Contact: 8178804840 ◊ E-mail: be10243.17@bitmesra.ac.in

ACADEMIC DETAILS

Indian Institute of Science, Bangalore 2021 - present
MTech(Research) (Aerospace)

Birla Institute of Technology - Mesra, Ranchi 2017 - 2021
Bachelor of Engineering (Mechanical)
CGPA: 8.93/10

Apeejay School - Noida 2016
Class: XII (**Stream:** Science, **Board:** CBSE)
Overall Percentage: 88.6%

Apeejay School - Noida 2014
Class: X (**Board:** CBSE)
GPA: 9.6/10

INTERNSHIPS & TRAININGS

IIT - Madras May 2020 - Aug 2020
Remote Summer Research Intern *Lucknow, UP*

The project was to investigate the linear stability of a thin dielectric hydrogel shell during pressure inflation. The analysis involved derivation of incremental equilibrium equations by simple perturbation of geometric variables. The results were computed and illustrated by the help of Mathematica.

IIT - Madras Dec 2019 - Jan 2020
Winter Research Intern *Chennai, TN*

The project involved nonlinear viscoelastic modelling of a hydrogel slab and fitting of experimental uniaxial tensile test data. The *scipy.optimize* Python library was used in order to determine the model parameters. Christensen's nonlinear viscoelastic model was implemented using Feng's recurrence formula.

ACADEMIC PROJECTS

Inflated Hyperelastic Membrane-Membrane Contact Aug 2020 - Jan 2021
Final Year Project *Mesra, JH*

The project involved parametric study of inflated hyperelastic membrane-membrane contact. The simulation of a high-pressure membrane indenting a low-pressure membrane axisymmetrically was carried out for different loading and material values. Governing equations were determined using variational mechanics and the resulting nonlinear ODEs were solved using *NDSolve* function of Mathematica. (*Intl. Journal of Nonlinear Mechanics* : <https://doi.org/10.1016/j.ijnonlinmec.2021.103805>)

SOFTWARE PROFICIENCY

Programming Languages: Python, Mathematica, MATLAB