ANANDU MURALIDHARAN

Undergraduate Student

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PROJECTS

Subcloning, expression and purification of human protein in E.Coli system

Dr. Sharmishta Majumdar

📅 Aug 2022 – Ongoing

- Subcloning gene of interest from one plasmid to another plasmid for heterogeneous expression in a bacterial system.
- Learned basic lab skills like polymerase chain reaction (PCR), Agarose gel electroporesis (AGE), Protein purification and bacterial cell culture during the duration of the project.

Characterization of diagenesis of bones from the Harappan site of Dholavira, Kutch, Gujarat, India

Dr. Sharada Channarayapatna

📅 May 2022-Aug 2022

- Analyzed the elemental concentration present in bones by using XRF analysis.
- Analyzed the presence of collagen in the sample by using FTIR analysis.
- Demonstrated that diagenesis had taken place in the sample by undergoing chemical exchange from nearby rocks and meteoric water.

Macroscopic model of traffic flow

Prof. Chethan Pahlajani

📅 Sept 2021 – Nov 2021

- Developed a Traffic Flow Model using various parameters including flow, volume, and density.
- Extended the ideal situation to generic vehicles using Lighthill Whitham Richard model of traffic flow.
- The ripple effect created by the individual vehicles was also studied extensively.

Analysing the P-V-T surface of R-134a

Prof. Atul Bhargav

📅 Oct 2021 - Nov 2021

- Carried out an analysis about the various relations between the state variables of R-134a.
- Studied about the refrigerant properties of R-134a and looked into its real world application - air conditioning in automobiles.
- Modelled the pressure-specific entropy-temperature graph using MATLAB and Cantera.

Determination of low earth orbit satellites

Prof. Satyajith Pramanik

📅 Mar 2022 - Apr 2022

- Developed the solution for the shapes of satellite orbits and plotted them in MATLAB. The solution was developed using Boundary Value Problems
- Verified the solution using the Newton – Raphson method.
- Contributed to the formulation of differential equations into BVP.

LABORATORY SKILLS

- Polymerase Chain Reaction (PCR)
- Agarose gel electroporesis (AGE)
- Protein purification
- Bacterial cell culture
- DNA isolation
- FTIR and XRF analysis

PROGRAMMING LANGUAGES

- Python
- C++
- C

TOOLS

- NanoDrop
- Centrifuge
- Origin
- Autodesk Inventor

LANGUAGES

English ●●●●●
Malayalam ●●●●●
Hindi ●●●○○

EDUCATION

B.Tech. in Materials Science (CGPA 7.67/10)

Indian Institute Of Technology Gandhinagar

📅 2020 - Ongoing

RELEVANT COURSES

- Thin Film Processing and Characterization
- Advanced materials
- Physics of materials
- Mechanical properties of materials
- Material thermodynamics and kinetics
- Micro-structural engineering
- Material characterization techniques
- Thermodynamics
- Introduction to materials
- Fluid Dynamics
- Solid Dynamics
- Corrosion

- Made a 3D simulation for plotting the path of the satelite.

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REFEREES

1. Sharmistha Majumdar
Associate Professor, IIT Gandhinagar

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2. Sharada Visweswara
Assistant Professor, IIT Gandhinagar

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