



BITS Pilani

Pilani | Dubai | Goa | Hyderabad | Mumbai
Research & Innovation



Date: 4 July, 2025

Application Deadline: 15th July 2025 | Joining: - At the earliest upon selection

Applications are invited for **one** fully funded position of a PhD Scholar on a sponsored project, under the **Wipro WIN Research fellowship** program. The selected candidate will work with [Dr. Abhishek Sarkar](#), [Dr Arnab Guha](#) and [Dr. Kurra Suresh](#) at the Department of Mechanical Engineering, BITS-Pilani, Hyderabad campus.

Research Topic: Design and Optimization of a Calendering process for Water-based Slurries for Enhancing the Production of Li-Ion Battery Cells

Scope of work: This project aims to design and optimize a calendering process for water-based slurry electrodes used in Li-ion batteries by investigating the correlation between key parameters—such as force, roller gap, temperature, porosity, and adhesion strength—and their impact on electrochemical performance. A custom calendering setup with real-time sensor integration will be developed to monitor and control process variables. A non-linear solid mechanics model will be implemented in COMSOL for simulation and prediction. A closed-loop control system using sensor feedback and PI control will be established to enhance electrode uniformity, ensuring improved mechanical integrity and electrochemical performance of the battery cells.

Essential Qualification: M.Tech/M.E. or equivalent in Mechanical Engineering / Chemical Engineering / Materials Science / Energy Engineering / Manufacturing Engineering or related fields, having a First Class or equivalent grade and a minimum of 60% aggregate at both UG and PG levels. Candidates with a Strong undergraduate background (B.E./B.Tech) in a relevant engineering discipline. with a First Class and (>8.0 GPA) can also apply.

Desirable Qualification: A background or prior experience in areas such as battery materials and Li-ion cell manufacturing is desirable. Familiarity with slurry formulation, electrode fabrication, and calendering processes is important. A solid understanding of mechanical design, heat and mass transfer, and fluid rheology is expected. Experience with materials characterization techniques, modeling and simulation tools, design of experiments (DoE), and process optimization methods will be considered an added advantage.

Fellowship: ₹37,000 + 27% HRA per month. Fellowship will be enhanced after completing 2 years. Research scholars will also receive domestic and international travel support and contingency funds for project work.

Duration: 4 years

Place of work: BITS Pilani, Hyderabad Campus

Application process: Please apply with **CV and Cover letter** (showing alignment and justification with the roles/responsibilities/requirements) using this form

- Please fill the Google form: <https://forms.gle/cX3HLBiLStwbevYd7>
- Deadline: **15 July 2025**

- Preliminary shortlisting will be based on resume and telephonic/audio-visual interview within a week of last date of application. For final interview, the candidate will be informed through e-mail for final interview (electronically). For any query regarding the application for position, please contact via email (abhisheks@hyderabad.bits-pilani.ac.in) or office phone number (+91 40 66303 772)

About Wipro Infrastructure Engineering

Wipro Infrastructure Engineering (WIN) is a global leader in precision-manufacturing solutions, specializing in hydraulic cylinders, industrial automation, aerospace, water treatment, and additive manufacturing. With a commitment to excellence and innovation, WIN serves diverse industries like robotics, automotive, construction, aerospace, and mining, driving technological and operational excellence.

Fellowship Overview

The Wipro WIN Research Fellowship supports PhD enrolment at BITS Pilani to pursue cutting-edge research, drive technological innovation and enhance WIN's competitive edge in smart technologies, sustainability, and cross-domain solutions.

Research Experience

PhD students will engage in an enriching research experience through the Wipro Research Division, collaborating on projects in key areas such as motion components and autonomous control, AI and computer vision, material science, electronics, and advanced manufacturing processes. Fellows will interact closely with Wipro's R&D engineers, participate in regular symposiums, and visit Wipro factories to gain hands-on exposure to industrial applications. These opportunities, facilitated in parallel with the facilities at BITS campus, ensure a dynamic blend of theoretical and applied research, preparing students for impactful contributions.

Contact Details: -

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