

SUSHMITHA H

Research Scientist



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Dedicated and experienced professional with expertise in elastomeric materials, calibration, and a strong background in NABL and ISO standards. Seeking a challenging role that leverages technical knowledge and analytical skills for continuous improvement in a dynamic environment.



Skills

- Experience in Material Characterization, Failure Analysis / Root cause Analysis
- Proficiency in Scanning Electron Microscope (SEM), Transmission Electron Microscope (TEM) and Atomic Force Microscope (AFM)
- Knowledge in Analytical tools DSC, TGA, FTIR, HPLC, GPC, GC-MS and ICP-OES
- Experience in Spectroscopes (XRD, XRF), Thermal and Electrical conductivity
- Knowledge in NABL, ISO 17025, ASTM, DIN and ISO standards
- Implemented and sustained 5S practices
- Handling of Internal and External Customers
- Knowledge and experience in polymer composites and Rubber technology
- Technical writing publications of research



Work History



Assistant Manager (Scientist Grade E)

JK Tyre Industries limited, Advanced Material Research, Mysuru, India

1. Organoclay Influence on Tyre Inner Liner

- Developed tire inner liner component with layered silicates via exfoliation.
- Modified compounds showed improved mechanical properties, 30% increased air retention.

2. Ionic Liquid (IL) Effect on Rubber Cure

- Addition of 0.5phr of IL enhanced curing cycle, tensile properties, and filler dispersion.
- Identified faster IL-ZnO reaction, offering insights for future studies.

2018-07 - Current

3. TBR and PCR Tread Cap with Graphene and CNT

- Developed TBR and PCR tread caps with Graphene and CNT Nanoparticles.
- Achieved improved properties, lower RRC, enhanced fatigue, and abrasion resistance.
- Successfully implemented project as regular compound in plant.

4. AFM Capability Enhancement for Rubber Analysis

- Studied filler distribution and surface properties of rubber compounds using AFM.
- Explored AFM potential with exclusive methods, establishing benchmarking database.
- Enabled understanding of unknown recipe compositions



Education

2018-04 - 2019-12

- **Diploma : Post Graduation Diploma course: Rubber Technology And Rubber Allied Products**

Indian Rubber Institute - Karnataka

2014-08 - 2018-03

- **Bachelor of Engineering: Polymer Science and Technology**

Sri Jayachamarajendra College of Engineering - Mysuru



Languages

- Kannada
- English
- Hindi
- German



Technical publications

- 1. **Research Article** "Influence of Organoclay dispersion on air retention and fatigue resistance of tyre inner liner compound" at **JAPS journal**
- 2. **Research Article** "Influence of carbon black particle size on fatigue life of rubber compound by varying strain and temperature" at **JAPS journal**
- 3. **Research Article** "Effect of Ionic Liquid (IL) in cure characteristics of the Rubber compound" at **PES journal**
- 4. **Patent:** Currently applied for a patent on use of sustainable materials (lignin) in rubber compounds.