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Research Experience: 30 years

Patents: Granted: 34 Applied: 06

Research Focus :

- Carbon dioxide fixation into valuable chemicals.
- Carbon monoxide fixation into valuable chemicals.
- Hydroformylation for synthesis of fine chemicals.
- Polycarbonates synthesis via organometallic complexes.
- Synthesis of nanomaterials & exploration of the nanomaterials synthesized as catalysts for organic synthesis.
- Hydrogenation reactions for organic synthesis.
- Asymmetric catalysis for organic synthesis.
- Electrochemistry.

Technology Licensed: NA

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Technologies (Proof of Concept- POC): TRL level.....

- Carbonylation of methanol to acetic acid.
- Hydroformylation of olefins to aldehydes (Indian Patent No. 23293 (2009), 249486 (2011)).
- Ethylene/propylene oxide to ethylene/propylene carbonate (JP 2003096074, 2003).
- Ethylene carbonate to dimethyl carbonate (JP 2003055306, 2003).
- MgO, ZnO, Pd Nanoparticles (Indian Patent No. 444090(2023), 347733 (2020), 280179 (2017), 271216 (2016), 274322 (2016)).

Technologies under development:

- Carbon monoxide Chemistry.
- Carbon dioxide Chemistry.
- Organic Synthesis.
- Ionic Liquids.
- Hydrogenations.

Targeted Industries:

- Bulk chemical manufacturers.
- Pharmaceuticals.

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