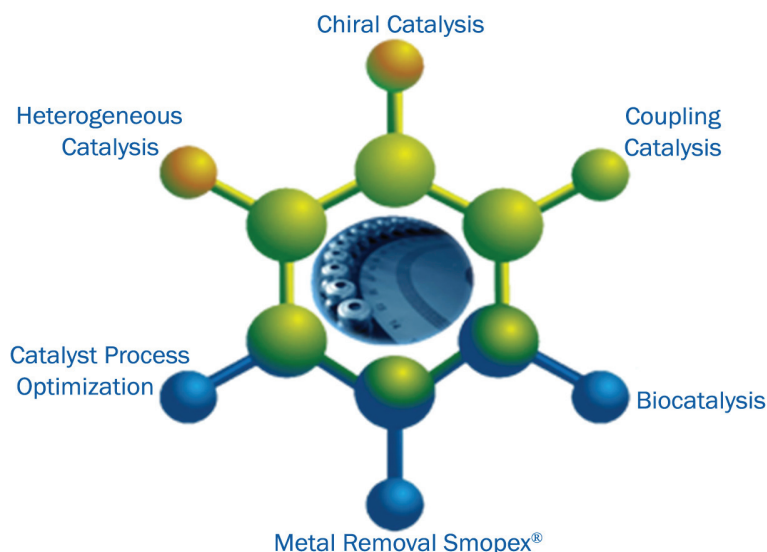


# CATALYTIC REACTION DESIGN SERVICES

**Johnson Matthey Catalysts** has established an outstanding reputation in contract research through providing the resources and catalysis expertise for:

- Catalyst design and development
- Catalyst screening and selection
- Route development
- Catalyst and process optimization
- Process scale-up



## Johnson Matthey Catalysts

**Our Team** of expert researchers deliver economical, robust, scalable processes, giving you a competitive advantage.

### Service Range

- Feasibility - milligram scale
- Optimization - multigram scale
- Scale-up - gram to kilogram scale

### Capabilities

- A team of 30+ scientists with decades of expertise in catalysis and organic synthesis
- Fully equipped R&D labs in UK, US and India
- Advanced parallel screening capabilities
- Comprehensive analytical instrumentation (NMR, IR, GC, HPLC, LCMS)
- Extensive portfolio of commercially available catalysts, ligands and enzymes

## RESEARCH SERVICES

CDA	(1-2 weeks) Research Proposal	(1 month) Catalyst Screening	Optimization	Scale up (optional)	Deliverables
Clear IP Resolution	Comprehensive research plan	Mutually agreed Targets	Establish Process Parameters	Scale up gram-to-kilo of compound	Extensive final report detailing recommendations based on our in-depth evaluations
You own the process	Extensive chemistry and literature review  Defined scope, milestones and timelines	Weekly updates  Optimal parameters defined (solvent, pressure, time, etc.)	Proof of Scale		

1 dedicated full-time Ph.D.

Continual client interaction

Customized Options Available

For additional information on our services go to [www.jmcatalysts.com/pharma](http://www.jmcatalysts.com/pharma)  
Contact us at: [cct@jmus.com](mailto:cct@jmus.com)