

An Indian-Australian research partnership

<b>Project Title:</b>	<b>Bicycle logistics and mobility in India and Australia</b>	
<b>Project Number</b>	ID00945	
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### Research Clusters:

### Research Themes:

Highlight which of the Academy's CLUSTERS this project will address? <i>(Please nominate JUST <b>one</b>. For more information, see <a href="http://www.iitbmonash.org">www.iitbmonash.org</a>)</i>		Highlight which of the Academy's Theme(s) this project will address? <i>(Feel free to nominate more than one. For more information, see <a href="http://www.iitbmonash.org">www.iitbmonash.org</a>)</i>	
1	Material Science/Engineering (including Nano, Metallurgy)	1	Advanced computational engineering, simulation and manufacture
2	Energy, Green Chem, Chemistry, Catalysis, Reaction Eng	2	Infrastructure Engineering
3	Math, CFD, Modelling, Manufacturing	3	Clean Energy
4	CSE, IT, Optimisation, Data, Sensors, Systems, Signal Processing, Control	4	Water
5	Earth Sciences and Civil Engineering (Geo, Water, Climate)	5	Nanotechnology
6	Bio, Stem Cells, Bio Chem, Pharma, Food	6	Biotechnology and Stem Cell Research
7	Semi-Conductors, Optics, Photonics, Networks, Telecomm, Power Eng	7	Humanities and social sciences
8	HSS, <b>Design</b> , Management	8	<b>Design</b>

## The research problem

*Define the problem*

The bicycle represents an accessible, low cost means of transport for people and goods. The specific characteristics of bicycles that would suit local conditions and be fit for various purposes such as urban commuting, deliveries, logistics and other commercial tasks are somewhat unknown and as a result the vehicles used for these purposes are compromised.

## Project aims

*Define the aims of the project*

This project aims to discover what vehicle characteristics require enhancements in India and/or Australia, for bicycles to be better adapted to utility purposes. The project will develop new bicycle vehicles. It may do this by challenging the prevailing vehicle types, for example adapting and modifying current dominant design paradigms, or developing entirely new ones. The project will deliver new knowledge on the design of bicycles for purposes of personal mobility, utility tasks, logistics such as goods transport and cargo. New innovations such as improved components and electric assist may be configured or designed from scratch to apply to cycling tasks.

## Expected outcomes

*Highlight the expected outcomes of the project*

An in-depth understanding of the requirements of bicycle vehicles to play a strong role in the future of sustainable mobility in India and/or Australia.

New bicycle design(s).

## How will the project address the Goals of the above Themes?

*Describe how the project will address the goals of one or more of the 6 Themes listed above.*

The project addresses the Design theme, specially Industrial Design by applying the studio research approach established in the IITB-Monash academy for creative work to be a part of the Industrial Design PhD.

## Capabilities and Degrees Required

*List the ideal set of capabilities that a student should have for this project. Feel free to be as specific or as general as you like. These capabilities will be input into the online application form and students who opt for this project will be required to show that they can demonstrate these capabilities.*

Bachelor Degree in Industrial Design  
Master's Degree in Industrial Design  
Demonstrated interest in sustainable transport and/or human powered vehicles  
Demonstrated ability to make and use prototypes