

An Indian-Australian research partnership

**Project title : Graphene-based ferromagnetic nanomaterials.**

**Project number:** IMURA0160

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### Research Academy theme/s

List only the research academy theme/s that is relevant to the project

Nanotechnology

Biotechnology and stem cell research

### The research problem

Ferromagnetic graphene oxide or its hybrids with magnetic nanoparticles will be synthesised through chemical methods and would be thoroughly characterized to investigate and understand their potential for some biomedical applications.

### Project aims

To fabricate graphene based nanostructures which are ferromagnetic in nature, it could be just graphene oxide itself or a hybrid with magnetic nanoparticles. These hybrids could be further functionalized for drug delivery or for hyperthermia treatment of cancer.

### Expected outcomes

- Fabrication of magnetic graphene nanostructures and loading drug into these hybrids.
- Making these multifunctional for cancer therapy or other biological applications

### Which of the above Theme does this project address?

1. **Nanotechnology**
2. **Biotechnology and stem cell research**

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

Graphene is one of the newest areas of research in nanotechnology. Since we are going to make these functionalized hybrids for drug delivery and cancer therapy, it is well suited for the area of biotechnology.