Our core philosophy at the Integrated Materials Design Centre (IMDC) is to pursue a holistic approach to the materials design cycle involving a tight collaborative exchange between the key parts of the materials discovery process: synthesis; characterization; testing and modelling.

Materials Epigenetics: A Powerfully Integrated Materials Design Loop

The IMDC comprises of core faculty from UNSW schools of Chemical Engineering; Materials Science and Engineering; and Photovoltaics and Renewable Energy (SPREE) as well as collaborating faculty from these three schools, and the UNSW School of Chemistry. The centre provides an intellectual and logistical environment for early career researchers involved in computational materials modelling at UNSW (faculty, research fellows, postdoctoral research associates and graduate students).

The centre’s four main research programs in materials discovery include:

- Catalytic materials;
- Energy harvesting and storage materials;
- Electronic materials and
- Soft matter and pharmaceutics.
Industry Engagement

Computation is a critical tool for solving problems for industry projects. Short R&D duration, large scale, and extreme working conditions are the common features of these projects. In most of the cases, the industry projects often require the researchers to deliver the prototypes with the specifications in a very short period. This can make industry-based or funded research and development very difficult. Development at UNSW through the activities of the proposed IMDC of a theory and computational capacity powerfully integrated and coupled with synthetic, characterization and testing capabilities will provide a unique competitive advantage for the engagement of industrial partners in the application fields that we are targeting.

Contact us

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