

Development of a Novel Nanofluid Based on Carbon Nanotubes and Ionic Liquids

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Nature of work: Experiments

Area: Chemical Engineering

Funding: *Via* the various University scholarship schemes (see separate information for these).

Brief description: Nanofluids are dilute liquid suspensions of nanoparticles with at least one of their critical dimensions smaller than 100 nm. This new type of composite materials have received significant attention in the last decade because of their enhanced properties and behaviour associated with heat transfer, mass transfer, wetting and spreading and antibacterial activity. These enhanced properties and behaviour imply an enormous potential for nanofluids in device miniaturization and process intensification which could impact on many industrial sectors including transportation, electronics, chemical and process, medical, and energy and environment. The aim of this project is to develop a novel nanofluid using carbon nanotubes dispersed in an ionic liquid. Such a nanofluid has the potential of increasing thermal performance by several orders of magnitude over the conventional thermal fluids, and can be used at much higher temperatures than currently possible.

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