McGill

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MEng & PhD positions in the fields of femtosecond laser micromachining and biomimetic surface engineering

We are currently looking for highly motivated MEng & PhD students to join our Surface Engineering group working at the interface of laser micromachining and surface engineering inspired by nature.

The focus of all research projects is centered around laser-matter interaction to influence material surface properties for wetting, adhesion, friction and flow applications. Thereby, ideas and applications are drawn from nature. This biomimetic approach aims design advanced products and processes, while saving energy in production and application in order to change our current state of living FROM nature to living in-sync WITH nature.
A femtosecond laser based irradiation process has proven suitable to micromachine superhydrophobic surfaces in one process step. Laser ablation and the interaction of the incident laser beam with the plasma plume result in distinct hierarchical surface structures on the micro- and nanometer scales. These micromachined patterns support distinct surface wetting behaviour, which can be exploited for adhesion, friction and flow applications.

Overall, all MEng and PhD projects are interdisciplinary in nature addressing aspects of laser physics and surface science.

Applicants that

- are looking for an intellectual challenge and like to learn,
- enjoy lab work and being part of a team,
- have a good background in applied physics,
- and are genuinely interested in surface science phenomena

should send their application to anne.kietzig@mcgill.ca.