

## Project proposal template – Faculty studentships Summer 2014

<b>Project proposal template – Faculty studentships Summer 2014</b>			
<i>Project title</i>	<input style="width: 90%;" type="text" value="Rocket Plume Interaction"/>	<i>Director of Study</i>	<input style="width: 90%;" type="text" value="Dr Peter Barrington"/>
<i>Second Supervisor</i>	<input style="width: 90%;" type="text" value="Dr Malcolm Claus"/>	<i>School</i>	<input style="width: 90%;" type="text" value="Aerospace and Aircr"/> ▼
<i>Other members of supervisory team</i>	<input style="width: 90%;" type="text" value="Prof Jian Wang"/>	<i>Any requirements from applicant (eg degree in specific subject area)</i>	<input style="width: 90%;" type="text"/>
<b>Project summary (max 1,000 characters)</b>			
<p>This project aims to quantify the interaction between the rocket exhaust plume and the external aerodynamics of a conventional satellite launch vehicle during the initial phase of its trajectory. The project consists of both experimental and computational elements. The test facilities at Roehampton Vale would be used during the project, this includes the rocket propulsion test laboratory, low speed wind tunnel, use of the Laser Doppler Velocimeter (LDV) and Computational Fluid Dynamics (CFD).</p> <p>The project will investigate the characteristics of rocket exhaust plumes and their influence on the external aerodynamics of the launch vehicle. The aim is to determine the characteristics for several rocket concepts - conventional bell nozzle, radial aerospike, linear aerospike, Thrust Vector Control (TVC) nozzle, and the interaction of multiple engines as currently proposed for future launch vehicles. Results from this project could be incorporated into a future launch vehicle or propulsion design concept</p>			