# Project proposal template – Faculty studentships Summer 2014

| | | | |
|---|---|---|---|
| *Project title* | The chemical analysis of tyres and the production of a novel chemical database in the investigation of | *Director of Study* | Dr James Barker |
| *Second Supervisor* | Dr Baljit Ghatora | *School* | Pharmacy and Chem |
| *Other members of supervisory team* | Dr Hessam Ghasemnejad | *Any requirements from applicant (eg degree in specific subject area)* | degree in physical, forensic or life sciences |

Project summary

**(max 1,000 characters)**

This PhD studentship will be interdisciplinary in nature and involve expertise from School of Aerospace and Aircraft Engineering. It is likely to further increase collaboration between the two Schools and possibly other Faculties (Criminology in FASS and Law), and will make an immediate and wider impact on vehicle crime in society by the creation of a newly developed chemical database, which, in addition, could have business interests.

It is the role of the Forensic Scientist to analyse the tyre striations that have been left at the crime scene. However, any poor features of the tyre skid marks observed on the road surface makes the identification questionable.

Tyre rubber varies in composition and therefore these features could be used as a comparative tool, as well as match the tyre with the skid mark at a crime scene and possibly the vehicle speed.

In this PhD, new lifting techniques and analytical methods e.g. ICPMS, FTIR, pyr-GCMS will be developed to provide information.

JB has a record of successful supervision of research students and submission of publications and is Course Director of MSc Forensic Analysis. BG & HG have expertise in forensics and materials' analysis.