

Project proposal

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| <i>Project title</i> | Cost effective monitoring and anti-icing system for maximum performance, safety and minimise the maintenance |
| <i>First Supervisor</i> | Dr <input type="text" value="Hessam Ghasemnejad"/> |
| <i>Second Supervisor</i> | Prof Jian Wang |
| <i>School</i> | Aerospace and Aircraft Engineering <input type="text"/> |
| <i>Other member of supervisory team (no more than three KU supervisors in total)</i> | Dr Sing Lo and Dr Hossein Mirzaei |
| <i>Specific requirements beyond 2:1 degree</i> | |

Project summary (max 4,000 characters)

MSc by Research

The aim of this project is to develop and demonstrate a novel cost effective monitoring and anti icing system for the maximum performance and safety, and at the same time minimising the maintenance. The project will emphasise three areas: performance monitoring, electricity storage and transportation, and ice formation and potential damage as well as prevention.

The objectives of the project are:

1. Develop and demonstrate a monitoring system which will remotely monitor the performance, ice formation/break off, structural health of the wind turbine
2. To investigate the dynamic response of advanced composite sub-structures applied in wind turbine blade, commonly used in the composite structures, to impact loading. Importantly, the dimension and position of delaminations in the composite panels used in this study will be chosen to accurately represent those proposed for the demining structures.
3. To advance the numerical studies for simulation of the impact response of advanced multidelaminated natural 3D hybrid composite structures. Within LS-DYNA, it is possible to conduct advanced calculations of impact loading response. The predictions will be used for assessing the risk for delamination failure of different type of structures and structural elements under impact loading.