

PhD Studentship: Structural integrity enhancement of offshore wind turbine support structures using advanced fatigue assessment methods



There is a 4-year PhD studentship, funded by EPSRC and Siemens Gamesa Renewable Energy, available on integrity assessment of offshore wind turbine support structures through an industrial CASE award. The overall aim of this project is to optimise the fatigue design and life assessment of offshore wind turbine support structures. Probabilistic assessments will be carried out to demonstrate the reliability level based on advanced two-stage fatigue models, which consider crack initiation and crack propagation phases explicitly. Previously disregarded effects particularly related to very long welds of large diameter structures will be incorporated.

As an additional element of the probabilistic framework, weld defects are included and their influence on the fatigue life of the support structures will be thoroughly analysed. This will be combined with an analysis of the strengths and weaknesses of the existing non-destructive evaluation (NDE) techniques for detection of different sizes and locations of weld defects.

This PhD project will be jointly supervised by Prof. Ali Mehmanparast at University of Strathclyde, and Dr Marc Seidel at Siemens Gamesa Renewable Energy. The studentship covers fees and tax-free stipend for 4 years, and includes industrial placements at Siemens Gamesa Renewable Energy offices in Europe. The project can start anytime before 1st of October 2024.

For informal enquiries and information about the application process please contact Prof. Ali Mehmanparast (ali.mehmanparast@strath.ac.uk)