

**Marie Skłodowska-Curie
PhD position, University of Warwick, UK**

This is associated with the Marie Skłodowska-Curie European Training Network:
“NDTonAIR: Training Network in Non-Destructive Testing and Structural Health Monitoring of
Aircraft structures”
EU call: H2020-MSCA-ITN-2016

Title of the PhD Research Project: Inspection of composite aerospace structures using capacitive imaging and guided waves.

Abstract: The project aims to examine a range of fibre composite materials, the aim being to detect changes in structure within them. This will involve both capacitive (electrostatic) imaging and ultrasonic pulse compression guided wave measurements. The work will examine both glass fibre composites (which is effectively an electrical insulator) and carbon fibre composites, which are partially electrically conducting. One interesting possibility is the detection of damage due to use at locally elevated temperatures or lightning strikes. The two technologies give complementary information - guided-wave ultrasonic inspection can map out large areas from a few remote access points, whereas capacitive imaging is a local area inspection. As the two approaches measure different physical properties, it may be possible to combine the results to give additional information concerning the nature of the structural change.

Expected Results: The detection and characterization of defects in such materials will be demonstrated, using both approaches to provide additional information that is not available from a single technique.

Expected Starting Date: 1st April 2017

Duration: 36 months

Application Deadline: 26th February 2017

Web page for applications: <http://www.jobs.ac.uk/job/AWT949/research-assistant-79023-017/>

Job description and eligibility Criteria: The PhD position is to be held jointly between the School of Engineering and the Department of Physics at the University of Warwick. The successful candidate could register for the PhD within either department. The research topic crosses several disciplines, and would be of interest to applicants with a background in either the Physical Sciences or Engineering. Experience in sensors and data acquisition systems is desirable and appropriate skills in written and spoken English speaking and essential. The research will be based at the University of Warwick, but also secondments are planned to other partners of the consortium (Nantes (France) and Perugia (Italy)).

In addition, the successful candidate must satisfy the following mandatory characteristics at the time of the recruitment (1st April 2017):

- having not more than 4 years of equivalent research experience (i.e. working as researcher after obtaining your master’s degree);
- having not been awarded a title of PhD;
- having not resided or carried out her/his main activity in the UK for more than 12 months in the last 3 years.

Contact: Please contact either Prof David Hutchins (d.a.hutchins@warwick.ac.uk) in the School of Engineering or Prof Steve Dixon (S.M.Dixon@warwick.ac.uk) in the Department of Physics, both at the University of Warwick, for further information.