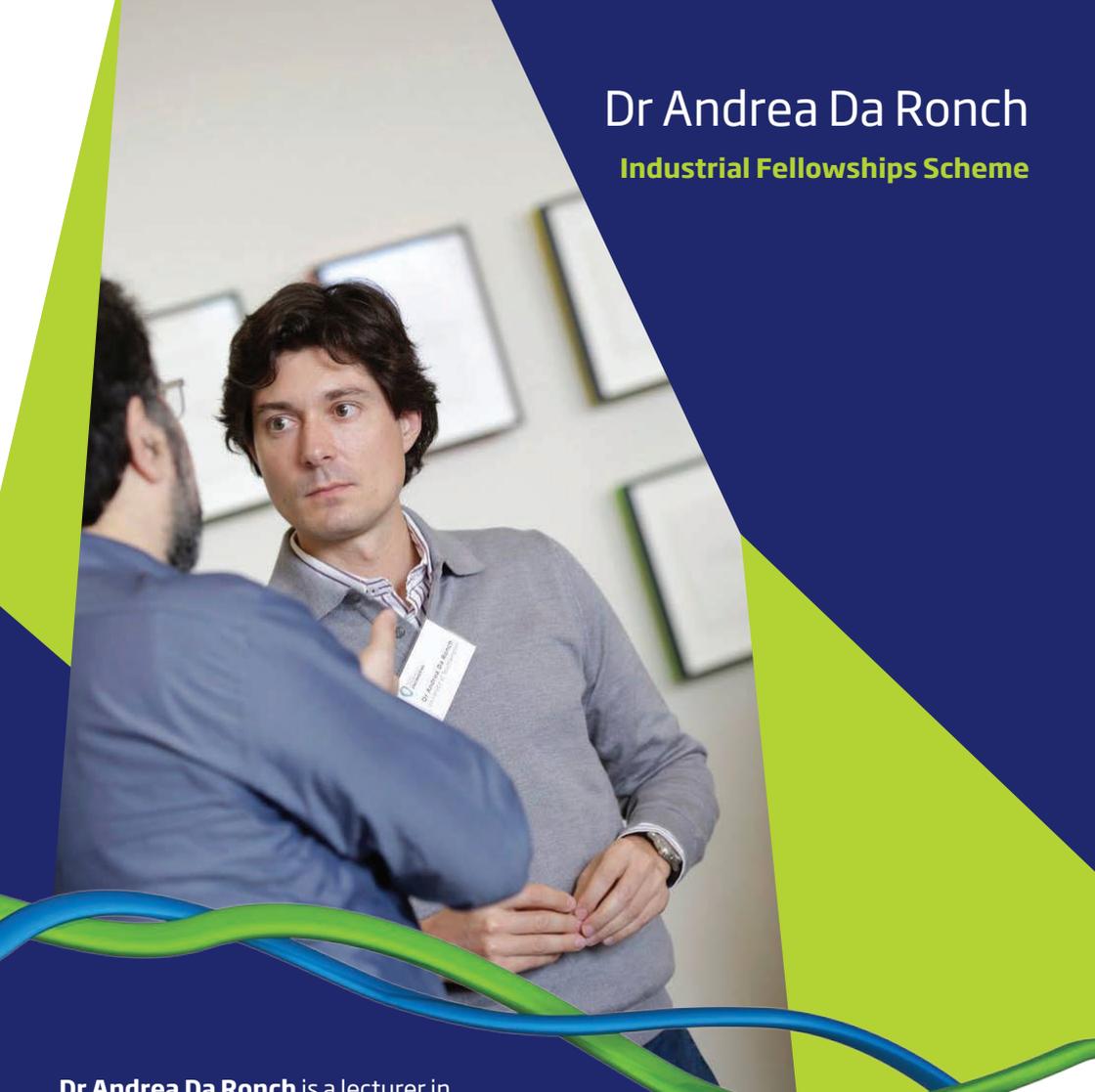


Dr Andrea Da Ronch

Industrial Fellowships Scheme



Dr Andrea Da Ronch is a lecturer in the Department of Engineering and the Environment at the University of Southampton. He held a Royal Academy of Engineering Industrial Fellowship between 2014 and 2015, which enabled him to develop new tools to improve aircraft design at Airbus.



“This Fellowship provided me with an extraordinary chance to transfer knowledge and skills from academia to industry.”

RESEARCH

Computational fluid dynamics makes a vital contribution to aircraft design by providing new approaches to visualising the flow of air around aircraft. Dr Da Ronch's research interests lie in using this approach to develop advanced software and tools that specifically facilitate understanding of the flow of air around aircraft wings. Such tools increase capacity for the complex simulations required in contemporary conceptual aircraft design.

Among other things, accurate aerodynamic modelling helps with analysing stability and understanding what causes turbulent air flow in different scenarios. Software tools and computational methods can generate the vast amounts of data needed to do this. However, achieving this in the most cost-effective way is a challenge for industry.

Having gained significant experience in this area, Dr Da Ronch was keen to further apply his research to these questions.

“We knew we could help industry by developing new methods and tools that can be more efficient,” explains Dr Da Ronch. “The Fellowship provided an excellent opportunity to show this.”

IMPACT

As a global pioneer in the aerospace industry, Airbus was the ideal partner to benefit from Dr Da Ronch's expertise in this field. The collaboration enabled him to develop new and more efficient procedures, which made significant improvements on existing ones, reducing computing costs by more than 80%.

“Algorithms we developed during the collaboration have been integrated into

software that is now being used in industrial production platforms at Airbus,” Dr Da Ronch explains. “This showed our ability to do industry-relevant research that goes beyond our office to benefit entire communities.”

The collaboration has been so successful that Dr Da Ronch has continued to work with Airbus to enhance other software tools since the Fellowship ended. The experience has also influenced his teaching and supported his work in modernising the aerospace curriculum within his department; he has designed and developed a new teaching module on aeroelasticity using examples and input from his connections with industry.

CAREER DEVELOPMENT

The Fellowship was awarded at a time when Dr Da Ronch was interested in developing his academic profile by strengthening his links with industry. He considers it as having played a significant role in raising his profile as an independent, international researcher. Since the Fellowship, he has successfully applied for additional funding in partnership with Airbus, including support for a PhD studentship.

ROYAL ACADEMY OF ENGINEERING INDUSTRIAL FELLOWSHIP SCHEME

The Industrial Fellowship scheme provides an invaluable opportunity for early- to mid-career academics to undertake a collaborative research project in an industrial environment. The scheme aims to strengthen the strategic relationship between the university and the industry host by providing an opportunity to establish or enhance collaborative research between the two parties and enhance the quality of teaching.