

## Marie Curie Early Stage Researcher PhD fellowship – Surface Engineering Solutions for Turbomachinery Applications

### Job Description:

We are seeking a talented graduate to join John Crane as an Early Stage Researcher (ESR) as part of SOLUTIONS, an EU funded Training Network.

The successful candidate will join John Crane UK Ltd. in Slough, UK on a fixed 3 year contract and be enrolled for a PhD course at the University of Coimbra, Portugal, funded by the EU under the H2020 Marie Skłodowska-Curie Actions program.

- The ESR will develop and validate a methodology to evaluate functional properties for turbo gas seals with novel solid lubricant coatings developed under this research project.
- As part of this, the coatings will be tested using custom-made tribometers (PoD, DoD, etc.) and turbo gas seal test rigs available at John Crane
- The properties of the novel solid lubricant coatings will be benchmarked against present surface engineering solutions of John Crane Gas Seals
- Specific coating analyses, such as wear track composition and tribo-induced structural changes, will be carried out both at John Crane and in laboratories of the collaboration European partners in the project.

As member of the Global John Crane R&D Department, the ESR will have the opportunity to broaden his engineering knowledge and draw on the extensive experience of colleagues at John Crane's R&D centres in the USA, UK and China.

### Eligibility Criteria to comply with the terms of the SOLUTIONS funding:

- Excellent graduate in Mechanical Engineering or Materials Science.
- Language: English, level = high advanced
- The applicant obtained a degree not more than four years from the starting date of the contract (October, 1<sup>st</sup> 2017) or has not been awarded a PhD prior to the contract.
- The applicant must not be a resident of the United Kingdom
- The applicant must not have resided or carried out main activities (work, studies, etc.) in the United Kingdom for more than 12 months in the past 3 years

## Programme Description:

**SOLUTIONS** is an Innovative Training Network in the frame of the MARIE SKŁODOWSKA-CURIE ACTIONS of Horizon 2020, which will offer 14 ESR positions (all of them pursuing PhD degrees) in a broad area of atomistic simulations, nanoscale investigation of 2D materials, development of novel solid lubricants and their application in an engineering practice.

**ESRs supervised by a team of leading academics and industrialists** will address current challenges in the field of solid lubricants such as dissipation routes of frictional energy, atomistic design of novel solid lubricants, the use of advanced deposition methods to produce them and testing them in real applications.

SOLUTIONS is a truly multidisciplinary project combining physics of solids, inorganic chemistry, material science and mechanical engineering. Thanks to secondments and various training activities, ESRs will have unique opportunities to become leaders pioneering step-change in reduction of emissions leakage and friction losses.

## Funding:

The ESR will be employed as Marie Curie Early Stage Researcher by John Crane UK Limited under a fixed 3 year contract; the salary is regulated by the MARIE SKŁODOWSKA-CURIE ACTIONS of Horizon 2020. Details can be provided for interested candidates.

Fees for training and PhD course are covered by John Crane UK Ltd under Horizon 2020 funding.

## About Us:

John Crane is a global leader in the design, development and manufacture of products and services for the world's process and industrial markets. With a history that stretches back over 100 years, our company has progressed from its roots as a packing manufacturer to become a world-leading supplier of mechanical seals, seal support systems, power transmission couplings and packing. Our recently expanded product portfolio ensures customers now benefit from a genuinely integrated offering that includes specialized filtration systems, advanced hydrodynamic bearings, measurement and analysis technologies and artificial lift products for the oil and gas industries.

Smiths is a global technology company listed on the London Stock Exchange. A world leader in the practical application of advanced technologies.

Smiths Group Plc has five divisions - John Crane, Smiths Medical, Smiths Detection, Smiths Interconnect and Flex-Tek. They are focused on the threat & contraband detection, medical devices, energy, communications and engineered components markets worldwide. Our customers range from governments and their agencies, to hospitals, petrochemical companies and equipment manufacturers and service providers in various sectors around the world.

Working for Smiths Group means that you will join a leading organisation that's making a positive difference to the world. At Smiths Group, developing talent is a vital part of our current and future business goals.

And as you'd expect from an international company, Smiths Group offers competitive salaries and benefits packages.

For more information please visit [www.smiths.com](http://www.smiths.com)

As an equal opportunity employer, we aim to ensure equal treatment for every job applicant and employee, and comply with all national laws.



**Contact:**

Mr Klaus-Dieter Meck

John Crane UK Ltd.  
Buckingham House  
361-366 Buckingham Avenue  
Slough  
Berkshire SL1 4LU  
UK

Email: [Klaus.Meck@johncrane.com](mailto:Klaus.Meck@johncrane.com)

**Project Starting Date:**

1st October 2017

