



Marie Skłodowska-Curie fellowship in the field of self healing soft robots

The **SMART** Innovative Training Network (ITN) is recruiting 15 motivated PhD students starting in March 2020. **SMART** is a joint venture between academia and industry, providing scientific and personal development of young researchers in the multidisciplinary fields of soft robotics and smart materials. The fellowships are funded as part of the Marie Skłodowska-Curie Actions (MSCA) Innovative Training Networks under the European Commission's H2020 programme. The successful candidates will be hosted at leading international universities, research centres and companies. They will contribute to the project "**S**oft, **S**elf-responsive, Smart **M**Aterials for **R**oboTs" as early stage researchers (ESRs) with the possibility to write a PhD thesis within the 3 years project duration.

SupraPolix is a young company based in Eindhoven, the Netherlands, that is developing innovative supramolecular polymeric materials for self-healing and biomedical applications. Our SupraB™-materials deliver unique processing and rheological benefits together with tunable material performance critically needed in the application of choice. SupraPolix is a partner in the SMART project and are worldwide recognized for the development of self-healing polymers using quadruple hydrogen bonding systems.

As of **March 1st** 2020 the following Marie Skłodowska Curie fellowship (ESR 15) will be assigned:

Design and synthesis of supramolecular self-healing polymers

Project description

Self-healing polymeric materials are beginning to reach the market in which the use of reversible non-covalent interactions is a recurring design principle. SupraPolix uses its proprietary H-bonding approach to take this design principle to its extreme. In this project, these supramolecular polymers will be combined with other self-healing approaches, such as Diels-Alder, in a very close collaboration with the Vrije Universiteit Brussel (VUB). The applicant will design and synthesize these new hybrid self-healing materials and study the properties to relate the achieved properties to the designed chemical structure. These hybrid materials will be processed into new, paramount, self-healing objects, which will ultimately cumulate in the generation of a robotic demonstrator.

The aim of the project is:

- To design, synthesize and characterize (chemically and rheologically) new hybrid polymeric self-healing systems
- to investigate and apply state-of-the-art processing methods such as additive manufacturing
- to integrate the new materials in a soft robotic demonstrator





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Your profile

- ✓ *Be Early-stage researchers (ESR). ESRs are those who are, at the time of recruitment by the host, in the first four years (full-time equivalent) of their research careers. This is measured from the date when they obtained the degree which formally entitles them to embark on a doctorate.*
- ✓ *Compliance with the mobility rules laid out in the MSCA ITN guidelines: At the time of recruitment, candidates **must not have legally resided or have had their main activity** in the country of their host organization for more than 12 months in the last 3 years immediately prior to their recruitment*
- ✓ *Willingness to move countries for ESR placement and temporary secondments*
- ✓ *Completed degree (Mag., Dipl.-Ing. or MSc.) (or obtaining a diploma before 15/10/2020) in the field of Chemistry or similar.*
- ✓ *Profound knowledge in polymer synthesis and material characterization*
- ✓ *Fluent in English: Network fellows (ESRs) must demonstrate that their ability to understand and express themselves in both written and spoken English is sufficiently high for them to derive the full benefit from the network training.*
- ✓ *Experience with polymer processing and/or 3D-printing are an asset*
- ✓ *Personal initiative, curiosity, reliable, responsibility, teamwork and communication skills*

We provide

- ✓ *Advanced research in a multi-disciplinary team*
- ✓ *Excellent contacts to industry as well as to national and international research organizations*
- ✓ *Additional educational program involving training schools, workshops and summer schools*
- ✓ *Flexible working hours, 40h per week*

Salary

The successful candidates will receive an attractive salary in accordance with the MSCA regulations for Early Stage Researchers (<http://ec.europa.eu/research/mariecurieactions/>) in the form of a scholarship. The exact salary will be confirmed upon appointment and is dependent on the country correction factor (to allow for the difference in cost of living in different EU Member States). The salary includes a living allowance, a mobility allowance and a family allowance (if already married). The guaranteed PhD funding is for 36 months.

Application

Please apply till **30/4/2020** according to the instructions on project website
<http://www.smartitn.eu/recruitment/>

