



Further information about the project  
are available at:

[www.biosmarttrainee.eu](http://www.biosmarttrainee.eu)



## Training in Bio-Inspired Design of Smart Adhesive Materials

### COORDINATOR CONTACT

#### Scientific contact

Dr. Alla Synytska

phone: 00493514658- 327

fax: 00493514658- 281

mail: [synytska@ipfdd.de](mailto:synytska@ipfdd.de)

#### Administrative contact

Sandra Martinka

phone: 00493514658- 599

fax: 00493514658- 98599

mail: [martinka@ipfdd.de](mailto:martinka@ipfdd.de)

The last half century has seen a tremendous advancement in adhesives technology and has led to widespread replacement of mechanical fasteners with adhesive bonds.

**Bonding to wet, rough and fouled surfaces**, however, remains challenging and adhesive technology is rarely applied for bonding in wet conditions.

Therefore, a need exists to educate young researchers in this **interdisciplinary research field of controlling adhesion under wet conditions** and to **bridge the gap between the fundamentals of underwater adhesives and their practice**.

---

**BioSmartTrainee** with **10 partners** from 5 different EU-countries will provide a training to **11 young researchers** in this interdisciplinary research field of controlling adhesion under wet conditions by a combination of **three complementary scientific fields**:

**POLYMER SCIENCE**, **ADHESION** and **(FLUID)-Biomechanics**.

## We aim to

- (I) **extract** principles from biological systems and mimic them to design synthetic materials;
- (II) experimentally **test** their adhesion properties in wet conditions
- (III) **clarify** the adhesion mechanisms based on natural examples and theoretical modelling.

These innovative materials will be useful for reversible attachment to a variety of surfaces in wet environments and, therefore, be highly relevant for products from European industry such as technological adhesives, coatings, tissue adhesives, wound dressings or transdermal delivery devices.

---

This carefully planned **research and training program** in a network of leading academic and industrial partners will ensure an excellent training in a pioneering research domain of high scientific and technological relevance, where Europe can take a leading position.

**Leibniz-Institut für Polymerforschung Dresden e.V.**  
(Project Coordinator)

Dresden | Germany | [www.ipfdd.de](http://www.ipfdd.de)

**Wageningen University**

Wageningen | The Netherlands | [www.wageningenur.nl](http://www.wageningenur.nl)

**École Supérieure de Physique et de Chimie Industrielles**

Paris | France | [www.espci.fr](http://www.espci.fr)

**Leibniz-Institut für Neue Materialien gGmbH**

Saarbrücken | Germany | [www.leibniz-inm.de](http://www.leibniz-inm.de)

**BASF SE**

Ludwigshafen | Germany | [www.standort-ludwigshafen.basf.de](http://www.standort-ludwigshafen.basf.de)

**University of Cambridge**

United Kingdom | [www.cam.ac.uk](http://www.cam.ac.uk)

**Eindhoven University of Technology**

Eindhoven | The Netherlands | [www.tue.nl](http://www.tue.nl)

**University of Patras**

Greece | [www.upatras.gr](http://www.upatras.gr)

**Imperial Chemical Industries Limited**

Slough | United Kingdom | [www.akzonobel.com](http://www.akzonobel.com)

**URGO Recherche Innovation et Développement**

Chenove CEDEX | France | [www.laboratoiresurgo.com](http://www.laboratoiresurgo.com)