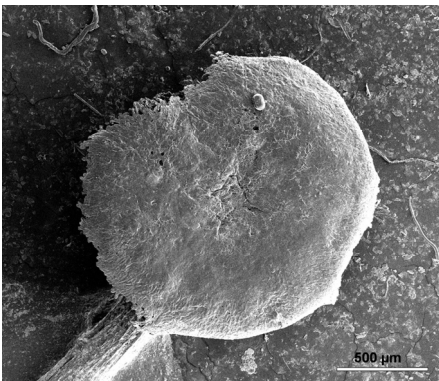

Permanent attachment systems of plants as models for bionic composites

Attachment systems of plants can generate lasting connections to a multitude of materials. This project – funded by the Landesstiftung Baden-Württemberg – analyses biological models to derive general principles for the set up of composites.



The aim of bionics is to analyse biological models and derive universally valid principles from them. With special form adaptations and biochemical components, plants have found solutions for mechanical problems like permanent attachment to various substrates, lamination of stiff and compliant materials or gradual transitions of materials and their mechanical and chemical properties within a structural element. Although known for a long time, there are so far no systematic analyses of the biomechanics, anatomy and biochemistry of the attachment organs of plants on various materials like metals, ceramics, rock or organics substrates.



The main goal of the project is a better understanding of the micro structure as well as the deformation and failure mechanisms of interfaces between organic and anorganic materials. The main focus will be on (1) understanding the mechanical interaction on organic/anorganic interfaces, (2) analyses of mechanisms and quantification of attachment on several orders of magnitude from the macroscale to the nanoscale and (3) development of new concepts for improved interfaces of technical composites.

Collaborating Partners

Prof. Dr. Thomas Speck
Plant Biomechanics Group Freiburg
Botanic Garden of the Albert
Ludwig University of Freiburg

Prof. Dr. Oliver Kraft
Research Center Karlsruhe
IMF II

More Information on the
Internet

Contact

Dr. Ruth Schwaiger
Research Center Karlsruhe, IMF II
Hermann-von-Helmholtz-Platz 1
D-76344 Eggenstein-Leopoldshafen
Germany
P: +49-(0)7247-824878
F: +49-(0)7247-822347
E: ruth.schwaiger@imf.fzk.de

www.kompetenznetz-biomimetik.de
www.kompetenznetze.de
www.biokon.net
www.fzk.de/imf



**Kompetenznetz
Biomimetik**

