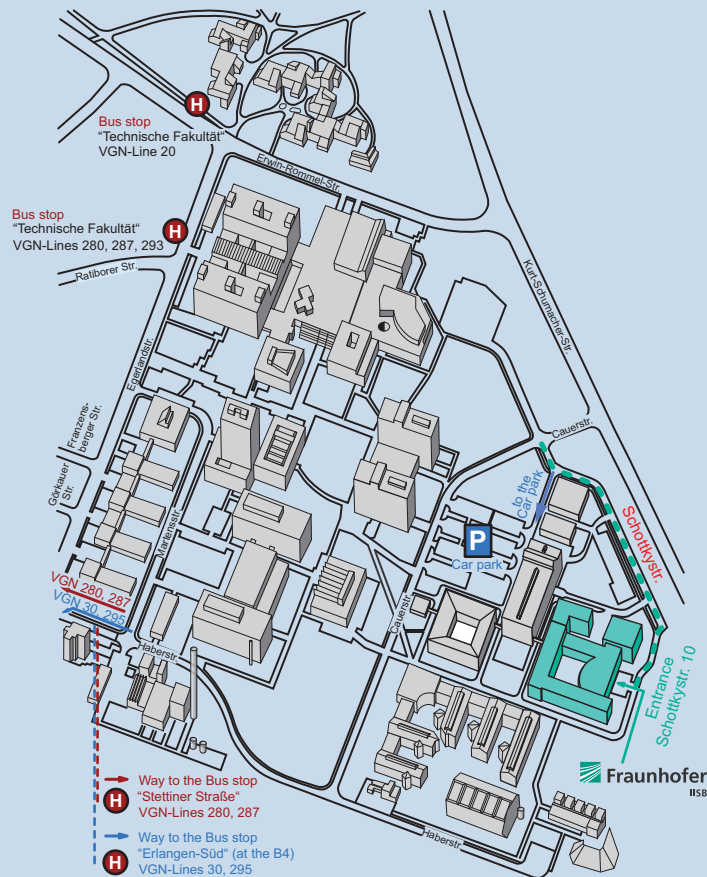


LOCATION

Hans-Georg-Waeber-Saal

Fraunhofer IISB
Schottkystr. 10
Erlangen



CONTACT

In order to be able to provide sufficient and comfortable space, we kindly ask you to register by **March 28, 2019** at the latest. Please send an E-Mail to grk2423-coordination@fau.de

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Research Training Group
GRK 2423

Fracture across Scales

KICK-OFF MEETING

Tuesday, April 2, 2019
14:00 to 20:00

Hans-Georg-Waeber-Saal
Schottkystraße 10, Erlangen



GRK 2423 FRASCAL

The GRK 2423 FRASCAL aims to improve understanding of fracture in brittle heterogeneous materials by developing simulation methods able to capture the multiscale nature of failure.

With i) its rooting in different scientific disciplines, ii) its focus on the influence of heterogeneities on fracture at different length and time scales as well as iii) its integration of highly specialised approaches into a “holistic” concept, the Research Training Group (RTG) addresses a truly challenging cross-sectional topic in mechanics of materials. Although various simulation approaches describing fracture exist for particular types of materials and specific time and length scales, an *integrated and overarching approach* that is able to capture fracture processes in different – and in particular heterogeneous – materials at various length and time resolutions is still lacking. Thus, the objective of this RTG consisting of interdisciplinary experts from mechanics, materials science, mathematics, chemistry, and physics is to develop the necessary methodology to investigate the mechanisms underlying brittle fracture and how they are influenced by heterogeneities in various materials.

Within GRK 2423 FRASCAL, young researchers under the supervision of experienced advisors perform cutting-edge research on challenging scientific aspects of fracture. The RTG fosters synergies in research and advanced education and is a key element in FAU's interdisciplinary research areas “New Materials and Processes” and “Modeling–Simulation–Optimisation”.

PROGRAMME

14:00 - 14:30 Opening & Welcome

Prof. Paul Steinmann (spokesperson)
Prof. Erik Bitzek (co-spokesperson)

14:30 - 15:30 Prof. Michael Ortiz

California Institute of Technology, Pasadena, CA, USA

Multiscale analysis of fracture under geostatic conditions

15:30 - 16:00 Coffee Break

16:00 - 17:00 Prof. Elias Aifantis

Aristotle University of Thessaloniki, Thessaloniki, Greece

Gradient fractional/fractal models for deformation and fracture

17:00 - 18:00 Dr. Laurent Ponson

Institut Jean le Rond d'Alembert Université Pierre et Marie Curie, Paris, France

Deciphering the roughness of cracks: what fracture surfaces teach us about the dissipative mechanisms controlling the toughness of materials

18:00 - 18:30 Welcome Reception with Snacks

Public Talk:

18:30 - 19:30 Dr. Bernd Flessner

Zentralinstitut für Wissenschaftsreflexion und Schlüsselqualifikationen ZiWiS, FAU Erlangen, Erlangen, Germany

Fiktive Materialien - Vom Cavorit zum Dilithium

„New materials“ from a quite different angle - materials that express the visions and dreams of scientists and researchers.

(will be held in German with short English summaries)

PUBLIC TALK

Dr. Bernd Flessner

Futurologist,
Media Scientist,
Author

Born in Göttingen in 1957, studied Theater and Media Studies, German and Modern History in Erlangen, Doctorate 1991 with Theo Elm on the future designs of Arno Schmidt and Stanislaw

Lem, teaches since 2011 as futurologist at FAU's Center for Applied Philosophy of Science and Key Qualifications (ZiWiS).

Cooperation in future studies and research projects with numerous institutions and companies, including DHL, Telekom, VDE, Deutsches Museum Munich, Adolf Grimme Institute, Imbus AG, Institute of German Business, Roman Herzog Foundation, LMU, TUM, ARD / ZDF Media Academy, Bavaria Innovative.

Lectures on various issues of the future (Sorbonne, BMVI, Deutsche Börse, Max Liebermann House = Stiftung Brandenburger Tor, Bavarian Academy of Fine Arts, Kunsthalle Emden, Media Days Munich, House of History, Bonn, International Editorial Design Conference, Munich and others).

His focus is on the future of the media and the convergence of technologies. Writes as a science and cultural journalist for the NZZ, NN, Kursbuch, Kultur & Technik, Archiv – Magazin für Kommunikationsgeschichte, BR, ZDF and others.

Scientific Advisory Board of the Deutsches Museum and as such responsible for the Zukunftsmuseum in Nuremberg, which is due to open in 2020.

Numerous publications to Suhrkamp, Rombach, Transcript, Kopaed, VDE-Verlag, GNV, Königshausen & Neumann, Beltz, Brockhaus, Randomhouse / Bertelsmann, Peter Lang, Ph. C.W. Schmidt, Tessloff, Ch.A. Bachmann and others.



Foto: Kurt Fuchs/
ZiWiS/ FAU