FRAUNHOFER ATTRACT
Fraunhofer Attract – From Ideas to Innovations

- Excellent external scientist (PhD or Professorship)
- Creative research idea
- Suitable Fraunhofer-Institute

Interested in industry-related research, career and leadership
With potential for application-oriented development
Research idea fits/adds perfectly to the R&D-portfolio of the selected institute

Joint application

In case of success: €2.5 million funding for 5 years
Fraunhofer Attract – Key Facts

- Fraunhofer’s excellence stipend program
- Up to € 2.5 million research budget over five years: 50% institute, 50% headquarters
- Budget and recruiting responsibility – management of a new research group with several co-workers at a Fraunhofer Institute
- Outstanding working conditions in optimally equipped Fraunhofer Labs
- Perspective to establish a new R&D segment within the Fraunhofer Institute and take over executive functions
- Advanced training during the grant – special personal development support including the opportunity to further develop personal, expert and management-oriented skills
Fraunhofer Attract – Program Goals

- Systematic recruiting and promotion of excellent scientists with innovative ideas
- Broaden the range of competencies and establish new business units
- Qualification of talents for executive positions in applied research, industry or at a university
- Maintaining and further increasing Fraunhofer’s position as a driving force in industrial innovation
- Successful implementation of the Attract-group into the Fraunhofer model after 5 years of funding: i.e. a budget containing revenues from public and industrial projects of approx. 1/3 each
Fraunhofer Attract – Application criteria

- External candidate with extraordinary reputation and scientific achievements, minimum completed PhD or equivalent experiences
- Creative research idea with realistic potential for application-oriented development
- Compatibility of research idea and candidate’s expertise with the R&D portfolio of the Fraunhofer Institute at which the group shall be embedded
- Joint application by scientist and Institute Director

Scientist identifies Attract
- subsidy databases
- conferences
- colleagues

Institute identifies scientist
- conferences, universities
- joint projects
- customers

External scientist contacts Fraunhofer

Matching
- qualifications and expertise of candidate
- R&D portfolio and strategy of institute

Joint application
Fraunhofer Attract – Application Process

- Identification of suitable Fraunhofer Institute
- Discussion of project idea and possibility of cooperation between external scientist and Fraunhofer Institute
- Joint preparation of proposal, research visit recommended
- Joint application by scientist and Institute Director
- Two calls for proposals per year, success rate: 57%

Consulting by Program Management

Call for proposals → Evaluation of proposals → Joint application by scientist and Institute Director → Evaluation Committee meeting and funding decision → Attract group

- approx. 6 weeks
- min. 4 weeks

Identification of suitable Fraunhofer Institute
## Fraunhofer Attract – Evaluation criteria

### Project idea (50%)
- **Project idea / final product**
  - Project idea innovative, implementation creative, final product useful
- **R&D topic**
  - Complements know-how of Institute, good chance for generating patents
- **Strategic aspects**
  - Group enriches Institute’s R&D portfolio, goals do not conflict with interests of other Fraunhofer Institutes and are in line with the general Fraunhofer mission
- **Market potential**
  - R&D market attractive in the long term, potential high in comparison to budget
- **Project management**
  - Working plan comprehensive and clear, Reasonable milestones defined

### Candidate (50%)
- **Professional excellence and social competence of candidate**
  - Outstanding career to date and excellent professional achievements (publications, patents, awards)
  - Distinct scientific curiosity
  - Focus on implementation and results
  - Interest in and instinct for future markets
  - Leadership skills in technical and social aspects, eager to take on responsibility
  - Inspiring personality, personal involvement, credibility and assertiveness
  - Communication skills and organizational talent
Fraunhofer Attract – Project Implementation

- Focus on generation of IP
- First R&D revenues

Year 1: Focus on generation of IP
Year 2: Focus on generation of IP
Year 3: Focus on generation of IP
Year 4: First R&D revenues
Year 5: First R&D revenues

- Evaluation Committee meeting and funding decision
- Launch of group, kick-off meeting
- Milestones
- Critical Milestone, status discussion
  Intermediate evaluation and decision on release of funds for remaining project duration
- Project completion
  Evaluation

Revenues of the group

Fraunhofer-Institute
Fraunhofer

Start
Establishment
Growth

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0 250 500

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# Fraunhofer Attract – in the Institutes

<table>
<thead>
<tr>
<th>Domain</th>
<th>Institutes</th>
<th>Associated Members</th>
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<tbody>
<tr>
<td>ICT</td>
<td>AISEC, ESK, FIT, FKIE, FOKUS, IAIS, IAO, IDMT, IESE, IGD, IOSB, ISST, ITWM, IVI, MEVIS, SCAI, SIT</td>
<td>HHI, IIS</td>
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<tr>
<td>Life Sciences</td>
<td>EMB, IBMT, IGB, IME, ITEM, IVV, IZI</td>
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<td>Light &amp; Surfaces</td>
<td>FEP, ILT, IOF, IPM, IST, IWS</td>
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<td>Microelectronics</td>
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<td>ESK, FOKUS, IDMT, IKTS, IZFP</td>
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<tr>
<td>Production</td>
<td>IEM, IFF, IML, IPA, IPK, IPT, IWU, UMSICHT</td>
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<tr>
<td>Defense and Security VVS</td>
<td>EMI, FHR, FKIE, IAF, ICT, INT, IOSB</td>
<td>HHI, IIS, ISI</td>
</tr>
<tr>
<td>Materials and Components – MATERIALS</td>
<td>EMI, IAP, IBP, ICT, IFAM, IKTS, IMWS, ISC, ISE, ISI, IWES, IWM, IZFP, LBF, WKI</td>
<td>IGB, ITWM, IIS</td>
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*Institutes outside groups: IMW, IRB*
Fraunhofer Attract – Contact

How to contact Fraunhofer Attract?

- Contact the management of your preferred Fraunhofer Institute directly: https://www.fraunhofer.de/en/institutes
- Contact the Fraunhofer Attract program management: Fraunhofer-Gesellschaft Dr. Hannah Venzl Hansastrasse 27 c, 80686 Munich, Germany Phone +49 89 1205-1220 hannah.venzl@zv.fraunhofer.de
- Visit our website for further information: http://s.fhg.de/attract-en
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<thead>
<tr>
<th>Date</th>
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<th>Project Title</th>
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<tr>
<td>02/10</td>
<td>IZFP-D</td>
<td>PD Dr. Thomas Härtling&lt;br&gt;High resolution plasmonic spectrometry for structural and biomedical health monitoring – »PlasmoSpec«</td>
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<tr>
<td>09/11</td>
<td>IPA</td>
<td>Prof. Oliver Röhrle, PhD&lt;br&gt;Virtual Orthopedic Lab: Simulation environment for orthopedic research and development – »VOL«</td>
</tr>
<tr>
<td>02/12</td>
<td>UMSICHT</td>
<td>Dr. Stefan Kaluza&lt;br&gt;Chemical feedstock and energy storage based on synthesis gas – bridging the gap between fundamental research and industrial application – »Development catalysts«</td>
</tr>
<tr>
<td>04/12</td>
<td>IWM</td>
<td>Prof. Dr. Christoph Eberl&lt;br&gt;»Small Scale Reliability«</td>
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<tr>
<td>09/12</td>
<td>IPA-PAMP</td>
<td>Dr. Nikolaos Deliolanis&lt;br&gt;Real-time spectroscopic medical imaging – »Optical Diagnostics«</td>
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<td>02/13</td>
<td>ISC</td>
<td>Prof. Dr. Doris Heinrich: &lt;br&gt;Cell-based Assays of 3D-bottom-up-nanostructured Surfaces for Regenerative Implants and Scaffolds – »3D-NanoCell«</td>
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Fraunhofer Attract – running grants

7. 02/13, IKTS: Dr. Peter Neumeister
   Mechanics of Materials for functional ceramics – From microstructur to device behaviour

8. 02/13, IZI: Dr. David M. Smith
   DNA-Structured Nanodevices for Therapeutic Delivery and Medical Diagnosis – »DNAstructured Nanodevices«

9. 03/13, IKTS: Dr. Mykola Vinninchenko
   Innovative ceramic layer systems for molten carbonate fuel cells with extended long-term stability and lifetime – »INNOVELLE«

10. 09/13, IVV: Prof. Dr. Jessica Freiherr
    Multimodal sensory integration processes with regards to food, packaging and presentation – »Multi-Sense«

11. 09/13, IME: Dr. Marc F. Schetelig
    »Environment-friendly pest control for the Spotted Wing Drosophila (SWD), Drosophila suzukii«

12. 10/13, IGD: Dr. Philipp Urban:
    »Reproducing Optical Material Properties by 3D Printing«
Fraunhofer Attract – running grants

13. 11/13, SIT - IEM: Prof. Dr. Eric Bodden
   Secure Software Engineering – »SSE«

14. 09/14, ITEM: Prof. Dr. med. Antje Prasse:
   Klinische und translationale Fibroseforschung – »KlaFier«

15. 02/15, MEVIS: Dr. David Porter
   General MR Framework for Research and Industry – »GEMRI«

16. 02/15, IAF: Dr. Agne Zukauskaite
   Development of AlScN layers for the next generation high-frequency filters –
   »PiTRANS«

17. 04/15, IME-MB: Dr. Johannes Felix Buyel
   Fast Applied Screening and Selection Technology for Protein Expression and
   Purification – »FAST-PEP«

18. 06/15, ISE: Dr. Robin J. White
   Sustainable Carbon Supports for Present & Future Hydrogenation Catalysis –
   «Flex-C-Cat»
Fraunhofer Attract – running grants

19. 10/15, IOF: Dr. Adriana Szeghalmi
   Atomic Layer Deposition for Optics – »ALDO«

20. 01/16, IKTS-MD: Dr. Juliane Pasold
   Biokeramik im biologischen System: Primäradhäsion von Proteinen und
   Signaltransduktion auf keramischen Implantat-Materialien – »PrimBioCer«

21. 01/16, IZI: Dr. Jana Burkhardt
   Verfahren zur Optimierung von T-Zell-Therapeutika zur Behandlung solider
   Tumore – »OpT-Zell«

22. 03/16, ISE: Dr. Elke Lorenz
   Anwendungsoptimierte, probabilistische Multiskalen-Solarleistungsprognosen für
   die Systemintegration von Solarenergie – »Pro Solar«

23. 03/16, IGB: Dr. Peter Loskill
   Entwicklung parallelisierter und automatisierter Organ-on-a-chip Systeme für
   Hochdurchsatz-Screenings in der Arzneimittelentwicklung – »Organ-on-a-chip«
Fraunhofer Attract – running grants

24. 07/16, IMWS: Dr. Christian Schmelzer
Elastin- und kollagenbasierte Hautprodukte – Materialdesign und Charakterisierung – »SkinNext«

25. 08/16, IME-MB: Dr. Philip Känel
PEBPs as fundamental link for growth and ageing control in plants and animals – »Longaevitas«
Hydrogen storage

Dr. Lars Röntzsch
Fraunhofer Institute for Manufacturing and Advanced Materials IFAM – Powder Metallurgy and Composite Materials in Dresden

- joined Fraunhofer from the Dresden-Rossendorf-Research Center in 2007
- Project: Development of reversible H2-storage systems up to pilot scale for mobile and stationary applications
- Goal: High storage density through nano-structuring and catalytic activation of the chosen material classes like metal hydrides
Visual perception for the man-machine-interface

Prof. Dr. Rainer Stiefelhagen
Fraunhofer Institute for Optronics, System Technologies and Image Exploitation IOSB in Karlsruhe

- joined Fraunhofer from the University of Karlsruhe in 2007
- Shared professorship with Fraunhofer and the University of Karlsruhe
- Project: Development of machine processes for the visual perception of people and for the utilization of multi-modal and aware man-machine-interfaces
- Goal: Aware man-machine-interfaces in “smart rooms”
“Up and down-conversion” in glass ceramics for highly efficient solar cells

PD Dr. Stefan Schweizer
Fraunhofer IWM, Center for Silicon Photovoltaics CSP in Halle

- joined Fraunhofer from the University Paderborn in 2007
- numerous awards, co-owner of 8 patents in the field of optically active glass ceramics and radiography, 92 peer-reviewed papers
- Project: “Up-and down-conversion in glass ceramics for highly efficient solar cells”
- Goal: “Light manipulation” moves the incoming light towards a more suitable frequency range for the solar cell and leads to an increase in overall degree of efficiency
“HPP” – Solutions for the Public Sector

Prof. Dr. Thomas F. Gordon
Prof. Dr. Jörn von Lucke (accompanying)
Fraunhofer Institute for Open Communication Systems FOKUS Berlin

- joined Fraunhofer from IAIS (Institute for Autonomous Intelligent Systems) Bonn in 1995
- Honorary Professorship “for Argumentation Technology” at the Institute Computer Science Univ. Potsdam

- joined Fraunhofer from the German University for Management Sciences Speyer in 2007
- since 2009: Professorship at Zeppelin University Dept. for Public Management and Governance (TICC), Friedrichshafen

- Project: Development of web interfaces for public administration: From guidance to administration portals to service centers and service clusters
- Goal: Evolution of public administration portals to high performance portals of the public domain
Multifunctional bulk building materials

Dipl.-Ing Christof Karlstetter
Fraunhofer Institute for Building Physics IBP in Valley

- joined Fraunhofer from Franz Oberndorfer GmbH & Co. in 2007
- head of R&D at Oberndorfer GmbH & Co.
- Project: Development of a new type of concrete, with higher value and more extensive functionalities
- Goal: Various innovative developments in bulk concrete materials, such as fiber reinforced porous concrete
Precursor-derived ceramics

**Dr. Isabel Kinski**
Fraunhofer Institute for Ceramic Technologies and Systems IKTS in Dresden

- joined Fraunhofer from the Technical University of Darmstadt in 2007

- Project: Fictionalization through chemical alteration at the molecular level; property engineering through molecular precursors; polymer derived ceramics

- Goal: Development and production of oxide nitride ceramics with tunable properties by molecular precursors
Sensors for biomedical and security applications

Dr. Volker Cimalla
Fraunhofer Institute for Applied Solid State Physics IAF in Freiburg

- joined Fraunhofer from the TU Ilmenau in 2007
- >200 ISI publications
- Project: Highly sensitive and selective electronic sensors for liquids with integrated light emitters
- Goal: Combination and integration of optoelectronic (light emitter and detector) and electronic (FET) building elements for novel sensor systems for the analysis of liquids in medicinal, environmental and security technologies
“CAPLE” – Context and Attention in personalized learning experiences

Dr. Martin Wolpers
Fraunhofer Institute for Applied Information Technology FIT in Bonn/Birlinghoven

joined Fraunhofer from Katholieke Universiteit Leuven (K.U.Leuven), Belgium in 2007

Coordinator of large European projects like “ROLE” (FP7 IP) and “Mace” (Metadata for Architectural Contents in Europe)

Project: Utilizing the observations about and context of the learner to facilitate application and task independent support of individualized learning experiences

Goal: Contextualized attention metadata (CAM) to enable personalized learning experiences
“UNIFISH” – Development of a universal high-throughput screening system with zebrafish

Dr. Martina Fenske
Fraunhofer Institute for Molecular Biology and Applied Ecology IME in Aachen and Schmallenberg

- joined Fraunhofer from the University of Exeter and Syngenta Jealott's Hill Int. Research Centre, UK in 2008
- Post-Doctoral Research Fellow at Syngenta Ltd., Jealott’s Hill International Research Centre; Marie-Curie Post-Doctoral Research Fellow at University of Exeter, UK
- Project: Development of a universally applicable high-throughput screening assay platform with zebrafish embryos
- Goal: Establish a powerful and versatile screening platform as an alternative to animal experiments
“STREAM” – Statistical Relational Activity Mining

Dr. Kristian Kersting
Fraunhofer Institute for Intelligent Analysis and Information Systems IAIS in Birlinghoven

- joined Fraunhofer from the Massachusetts Institute of Technology MIT in 2008
- numerous awards and research visits at renowned research groups in the field of artificial intelligence and machine learning

Project: Statistical relational learning as the basis for the next generation of Artificial Intelligence

Goal: STREAM’s goal is to develop formalisms, models, and algorithms for effective and robust statistical relational activity mining for significant real-life applications
“Smart μOptics” – Smart Materials for Tunable Micro-Optics based on silicon technology

Dr. Florenta Costache
Fraunhofer Institute for Photonic Microsystems IMPS in Dresden

- joined Fraunhofer from the University of Cottbus in 2008
- best PhD in Physics at the University of Cottbus in 2007
- Project: Design and development of tunable micro-optical components by the implementation of electro-active polymers in Si-based micro-electro-mechanical systems (MEMS).
- Goal: Demonstration of the potential of a “Novel Technology Platform” by specific applications of micro-optical components
Distributed Usage Control

Prof. Dr. Alexander Pretschner

Fraunhofer Institute for Experimental Software Engineering IESE in Kaiserslautern

Fraunhofer Institute for Optronics, Systems Technologies and Image Exploitation IOSB in Karlsruhe

- joined Fraunhofer from ETH Zürich in 2008
- Professor at the Technical University in Munich, Institute for computer science
- Project: Technological and methodological framework for the specification, analysis and enforcement of usage control
- Goal: Implementation of control mechanisms and tools for the development of relevant usage control systems

“With the distribution of data the original owner usually loses control over the data - this problem is the basis of the project 'Distributed Usage Control'”
Direct Laser Interference Patterning

Dr. Andrès Lasagni  
Fraunhofer Institute for Material and Beam Technology IWS in Dresden

- joined Fraunhofer from Georgia Institute of Technology, USA in 2008
- Humboldt-Fellow at Georgia Tech, several cover pages in “Advanced Engineering Materials”
- Project: Direct Laser Interference Patterning
- Goal: Functionalization of coatings and surfaces as well as the rational design of functional two- and three-dimensional periodic architectures with applications in different technological areas such as tribology (wear and friction) and biotechnology
“IMAGINE” – Innovative Material Design for Impacted Compound Structures – An inverse multi-scale methodology

Dr. Nik Petrinic
Fraunhofer Institute for High-Speed-Dynamics Ernst-Mach-Institute EMI in Freiburg

- joined Fraunhofer from University of Oxford, UK
- Project:
  Development of an integrated experimental numerical concurrent multi-scale predictive modelling methodology for design of innovative material architectures
- Goal:
  Improved prediction of inter-fibre-failure including delamination in composites under predominantly compressive loading for aerospace sector related impact engineering applications
Novel plasmonic structures as nano-optical components in laser technology

Prof. Dr. Thomas Taubner
Fraunhofer Institute for Laser Technology ILT in Aachen
- joined Fraunhofer from Stanford University in 2009
- Junior Professor at RWTH Aachen
- Project:
  Plasmonic structures as nano-optical components, laser and laser-components for nanophotonics and nanophotonic applications
- Goal:
  Exploration of novel plasmonic structures as nano-optical components in laser technology
Broadband spectroscopy and photothermal techniques for analysis of liquids and defect analysis of optical materials

Prof. Dr. Frank Kühnemann
Fraunhofer Institute for Physical Measurement Techniques IPM in Freiburg

- joined Fraunhofer from German University of Cairo
- Project:
  Broadband spectroscopy and photothermal techniques for analysis of liquids and defect analysis of optical materials
- Goal:
  New optical measurement technologies for the analysis of liquids; development of customized measuring instruments for the optimization of the manufacturing process of optical materials
Architectures for Auditable Business Process Execution – “APEX”

Prof. Dr. Jan Jürjens  
Fraunhofer Institute for Software und Systems Engineering ISST in Dortmund

- joined Fraunhofer from Microsoft Research (Cambridge) and Robinson College (University of Cambridge) in 2009

- Project:  
  IT-architectures for auditable business-processes

- Goal:  
  IT-concepts for the insurance business, e.g. for compliance in the integration and implementation of governmental regulations – like Solvency II – in their business processes
Multi-Physics Simulation

PD Dr. Christoph van Treeck
Fraunhofer Institute for Building Physics IBP in Valley

- joined Fraunhofer from Technical University of Munich in 2009

- Project:
  Development and validation of complex numerical simulation of indoor climate and its impact on human beings under inhomogeneous and non-stationary conditions

- Goal:
  A parameterized multi-segment-model “made by Fraunhofer”
Development of bio-inspired cardiovascular regeneration technologies

Dr. Katja Schenke-Layland
Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB in Stuttgart

- joined Fraunhofer from University of California UCLA in 2010
- Project: Development of sustainable myocardial therapies for regenerative medicine
- Goal: Novel hybrid carrier structure and progenitor-cells for new regenerative therapies for the myocardial muscle

Successfully finished
High resolution plasmonic spectrometry for structural and biomedical health monitoring

PD Dr. Thomas Härtling
Fraunhofer Institute for Non-destructive Testing
IZFP in Dresden

- joined Fraunhofer from Technical University Dresden
- Project: PlasmoSpec – high resolution plasmonic spectrometry for structural and biomedical health monitoring
- Goal: Novel compact sensor-detector systems, which as a core element feature extremely small and efficient plasmonic spectrometers
“NanoAssess” – Nanoscale Assessment of Innovative Joining Technologies for Microsystems Engineering

Prof. Dr. Thomas Höche
Fraunhofer Institute for Mechanics of Materials
IWM in Halle

- joined Fraunhofer from Leibniz Institute of Surface Modification (Leipzig)/3D-Micromac AG (Chemnitz) in 2010
- Project: evaluation and assessment of innovative joining technologies for Microsystems technology on glassy/oxidic surfaces taking into account process quality and reliability risks, assessment of reliabilities with aid of nanoanalytics
- Goal: validation of joining technologies suitable for Microsystems engineering meeting high requirements concerning reliability; assessment of new joining methods
“VOL” – Virtual Orthopedic Lab  
Simulation environment for orthopedic research and development

Prof. Oliver Röhrle, Ph.D.  
Fraunhofer Institute for Manufacturing Engineering and Automation IPA in Stuttgart

- joined Fraunhofer from University of Stuttgart
- Junior-Professor at the University of Stuttgart

Project:  
Virtual Engineering Environment for the development and testing of prostheses and implants

Goal:  
Efficient workflow processes for the software-based development of implants and prostheses: minimization in the use of samples through test simulations, entailing an optimization of the construction
“OLITH“ – OLED Microdisplay Fabrication by Orthogonal Photolithography

Dr. Alexander Zakhidov
Fraunhofer Institute for Photonic Microsystems IPMS in Dresden

- Joined Fraunhofer through an Alexander von Humboldt-scholarship from Technical University of Dresden
- Several PostDoc years at Cornell University
- Project: Orthogonal Photolithography techniques for the manufacturing of organic light emitting diodes (OLEDs)
- Goal: Successful manufacturing process for OLED displays with a long operational life span together with a high level of reliability ensured by the application of photolithography techniques
»Catalyst Design« – Chemical feedstock and energy storage based on synthesis gas

**Dr. Stefan Kaluza**
Fraunhofer Institute for Environmental, Safety and Energy Technology UMSICHT in Oberhausen

- Joined Fraunhofer from the Laboratory of Industrial Chemistry, Ruhr-University Bochum 2012
- Project: Development and upscaling of heterogeneous catalysts, extensive characterization of the materials, as well as testing and application of the systems in industrial-relevant processes
- Goal: Transfer of structure/performance relationships and concepts to industrial feasible systems for large-scale applications
“ProFerment” – Fermentation of plant proteins – development of new food products with high consumer acceptance

Dr. Simone Toelstede
Fraunhofer Institute for Process Engineering and Packages IVV in Freising

- Joined Fraunhofer from industry (RAPS GmbH & Co.KG in 2012)
- Project: Development of new food products with high consumer acceptance based on fermented plant proteins
- Goal: New plant-based food products with high sensory quality; extension of the product portfolio for vegetarians
Small Scale Reliability

Dr. Christoph Eberl
Fraunhofer Institute for Mechanics of Materials, Freiburg

- joined Fraunhofer in 2012
- Project: Assessment of mechanical properties and reliability of small scale samples as well as technological advancement of experimental micro mechanics.
- Aim: Experimental assessment of micro mechanical properties and reliability of small scale materials

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\max T_a + \alpha \sigma_{H,max} \leq \gamma_a
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\[
Q^m = A \exp(BT)
\]

\[
Q^p_{\text{line}} = \Delta \frac{\omega \epsilon}{1 + (\omega \epsilon)^2}
\]
Real-time spectroscopic medical imaging  
Optical Diagnostics

Dr. Nikolaos C. Deliolanis  
Fraunhofer-Institute for Manufacturing Engineering and Automation IPA Stuttgart and PAMB Mannheim

- Joined Fraunhofer from Helmholtz-Zentrum and TU München in 2012
- Post-Doctoral Fellow in Massachusetts General Hospital – Harvard Medical School, IEF Marie Curie Postdoctoral Research Fellow
- Project: Development of real-time multispectral imaging methods and systems
- Aim: Transfer of spectroscopic imaging technologies and know-how in the field of medical imaging applications in order to improve the outcome of medical practice.
Cell-based Assays of 3D-bottom-up-nanostructured Surfaces for Regenerative Implants and Scaffolds

Dr. Doris Heinrich
Fraunhofer-Institute for Silicate Research ISC in Würzburg, Germany

- Joined Fraunhofer from LMU in 2013
- Project:
  Investigating biophysical interactions between cellular systems and surfaces of novel nano-structured materials to generate cell-type specific standard assays
- Aim:
  Development of active, intelligent implants for use in human bodies and design of 3D-scaffolds for tissue engineering
Mechanics of Materials for functional ceramics: From microstructure to device behaviour

Dr. Peter Neumeister
Fraunhofer Institute for Ceramic Technologies and Systems IKTS in Dresden

- Joined Fraunhofer from TU Dresden in 2013
- Project: Investigation and systematic adjusting of electromechanical interactions inside the structure of functional ceramics as well as functional systems
- Aim: Developing new functional materials and systems for ultrasonic, high energy and adaptive systems applications
DNA-Structured Nanodevices for Therapeutic Delivery and Medical Diagnosis

Dr. David M. Smith
Fraunhofer Institute for Cell Therapy and Immunology IZI, Leipzig

• Joined to Fraunhofer from LMU in 2013
• Project:
The development of nanometer-scale diagnostic, therapeutic and biological tools constructed by methods as DNA self-assembly and other forms of programmed molecular assembly.

• Goal:
Construction of drug carrier systems, modular components for nanostructured biosensors, functional constructs for cell targeting/recognition and specific immunomodulators.
INNOVELLE – Innovative ceramic layer systems for molten carbonate fuel cells with extended long-term stability and lifetime

Dr. Mykola Vinnichenko
Fraunhofer Institute for Ceramic Technologies and Systems IKTS in Dresden

- Joined Fraunhofer from Helmholtz-Zentrum Dresden-Rossendorf in 2013
- Project: investigation of the degradation processes in molten carbonate fuel cells (MCFC) and development of innovative ceramic materials for MCFC-components
- Aim: extending the MCFC-lifetime from present 5 to more than 7 years by controllably reducing the components solubility and the particle growth in the molten carbonates
“MultiSense“ - Multimodal sensory integration processes with regards to food, packaging and presentation

Prof. Dr. Jessica Freiherr  
Fraunhofer Institute for Process Engineering and Packaging IVV in Freising

- Joined Fraunhofer from RWTH Aachen University in 2013
- Assistant professor at RWTH Aachen University
- Project: Multidimensional sensory analysis of food and characterisation of related human responses
- Aim: To facilitate and strengthen an holistic characterisation of sensory parameters during food evaluation and product development
»ElekTera« – Innovative electronic terahertz systems for industrial applications

Dr. Fabian Friederich
Fraunhofer Institute for Physical Measurement Techniques IPM in Freiburg

- Joined Fraunhofer from the German Aerospace Center in 2013
- Project: Development of electronic terahertz system modules and integration of innovative technologies and methods for terahertz measurement techniques
- Aim: Realization of custom-designed THz-systems for industrial applications
Environment-friendly pest control of the Spotted Wing *Drosophila* (SWD), *Drosophila suzukii*

**Dr. Marc F. Schetelig**
Fraunhofer Institute for Molecular Biology and Applied Ecology in Aachen

- Joined Fraunhofer from the United States Department of Agriculture in 2013
- Consultant for international organisations in the agricultural sector; Head of an Emmy-Noether research group
- Project: Development of environment-friendly pest control systems to combat the invasive Spotted Wing Drosophila
- Aim: Control of highly invasive pests for the protection of biodiversity and the agricultural sector in Germany and Europe
Dr. Philipp Urban
Fraunhofer Institute for Computer Graphics Research in Darmstadt

- Joined Fraunhofer from TU Darmstadt in 2013
- Project: Developing models, algorithms, and software for the perceptually optimal reproduction of 3D-objects with annotated optical material properties by multi-material 3D printing.
- Aim: A 3D-copier allowing for the reproduction of an object’s visual appearance (color, texture, gloss, and translucency) in addition to its geometry.
Secure Software Engineering

Prof. Dr. Eric Bodden
Fraunhofer Institute for Secure Information Technology SIT

- Joined Fraunhofer from Technische Universität Darmstadt in 2013, through a Cooperative Professorship
- Project: Secure Software Engineering
- Aim: development of novel automated code-analysis techniques for discovering security vulnerabilities in large software systems
General MR Framework for Research and Industry (GEMRI)

Dr. David Porter
Fraunhofer Institute for Medical Image Computing in Bremen

- Joined Fraunhofer from Siemens Healthcare in 2014
- Project: General MR Framework for Research and Industry (GEMRI)
- Aim: The development of novel techniques in clinical magnetic resonance imaging using a dedicated software development environment
FAST-PEP

Dr. Johannes Felix Buyel
Fraunhofer Institute for Molecular Biology and Applied Ecology in Aachen

- Joined to Fraunhofer in April 2015
- Project: FAST-PEP → Fast Applied Screening and Selection Technology for Protein Expression and Purification
- Aim: Streamline product and process development to reduce research and production costs
- The rational and model-guided synthesis of production processes for biopharmaceutical proteins will help to reduce the costs of healthcare systems and thus ensure a sustainable supply with high quality medicines
PiTRANS – Development of AlScN layers for the next generation high-frequency filters

Dr. Agne Zukauskaite
Fraunhofer Institute for Applied Solid State Physics IAF in Freiburg

- Joined Fraunhofer from Linköping University, Sweden in 2015
- Project: To design, optimize, and produce piezo-transducers, and to establish a technology platform based on AlScN and other compounds for the next generation micro-electro-mechanical systems (MEMS) operating in the 0.7-3 GHz frequency range
- Aim: more efficient, smaller, and cheaper piezoelectric components for future telecommunication industry
Dr. Robin J. White

Fraunhofer Institute for Solar Energy Systems ISE in Freiburg

- Joined Fraunhofer in 2015 from the University of Freiburg / Freiburger Materialforschungszentrum (FMF).
- Previous work at the Max Planck Institute for Colloids and Interfaces, TU Berlin and the Institute for Advanced Sustainability Studies.
- Editor of Royal Society of Chemistry (UK) Green Chemistry Series book entitled “Porous Carbon Materials from Sustainable Precursors”.
- Aim: R&D concerning tailor made biomass-based catalyst and catalyst supports designed to address the challenges of H₂, CO₂ and biomass conversion and underpin the establishment of Power-to-Liquids and –Chemical schemes.
OpTcell – Optimization of T-cell therapeutics for treatment of solid tumors

Dr. Jana Burkhardt
Fraunhofer Institute for Cell Therapy and Immunology IZI in Leipzig

- Joined Fraunhofer in January 2016
- Project: OpTcell
- Aim: Set up of a research group in the innovative field on cancer immunotherapy with a special interest in optimization of T cell based therapeutics for treatment of solid cancers.
PrimBioCer - Ceramic in the Biological System: Primary Adhesion of Proteins and Signal Transduction on Ceramic Implant Materials

Dr. Juliane Pasold

Fraunhofer Institute for Ceramic Technologies and Systems IKTS in Dresden

- Joined to Fraunhofer from University Medicine Rostock in 2016
- Project: 69200 (PrimBioCer)

Aim: 1) Development of immunobiological test procedures and methods to assess the suitability of bio-ceramic materials as implants

2) Introduction of immunologically and antimicrobial biomolecules in implant materials to regulate the foreign body reaction of the immune system
Human *Organ-on-a-chip* systems for high-throughput screening

**Dr. Peter Loskill**

**Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB in Stuttgart**

- Joined Fraunhofer from University of California at Berkeley in 2016
- Project: Development of parallelized and automatized Organ-on-a-chip systems for high-throughput screening in pharmaceutical industry
- Aim: Cost efficient, predictive, and ethically responsible in vitro models with a human genetic background as an alternative to animal testing
SkinNext - Elastin- and Collagen-based Skin Products – Material Design and Characterization

Dr. Christian Schmelzer
Fraunhofer Institute for Microstructure of Materials and Systems IMWS in Halle

- Joined Fraunhofer from the Martin Luther University Halle-Wittenberg in 2016
- Project: Development of novel biomaterials which are inspired by natural biopolymers of the extracellular matrix and mimic mechanical and biological properties of soft tissues
- Aim: Biofunctional, mechanically and enzymatically resistant composite materials for biomedical applications
Longaevitas – PEBPs as fundamental link for growth and ageing control in plants and animals

Dr. Philip Känel
Fraunhofer Institute for Molecular Biology and Applied Ecology IME in Muenster

- Joined to Fraunhofer from University of Muenster in 2016
- Project: Intervention in the ageing and growth behaviour of plant and animal (cells)
- Aim: Molecular tools for crop plant optimization and pharmaceutical target generation