

FACTS 2016/17






With regard to our reporting requirements, we compiled information on publications, patents and theses as well as on our networks and cooperations in science and industry in this separate annex. You can also download the „FACTS 2016/17“ of the Fraunhofer IME as well as our corresponding annual report from our website:

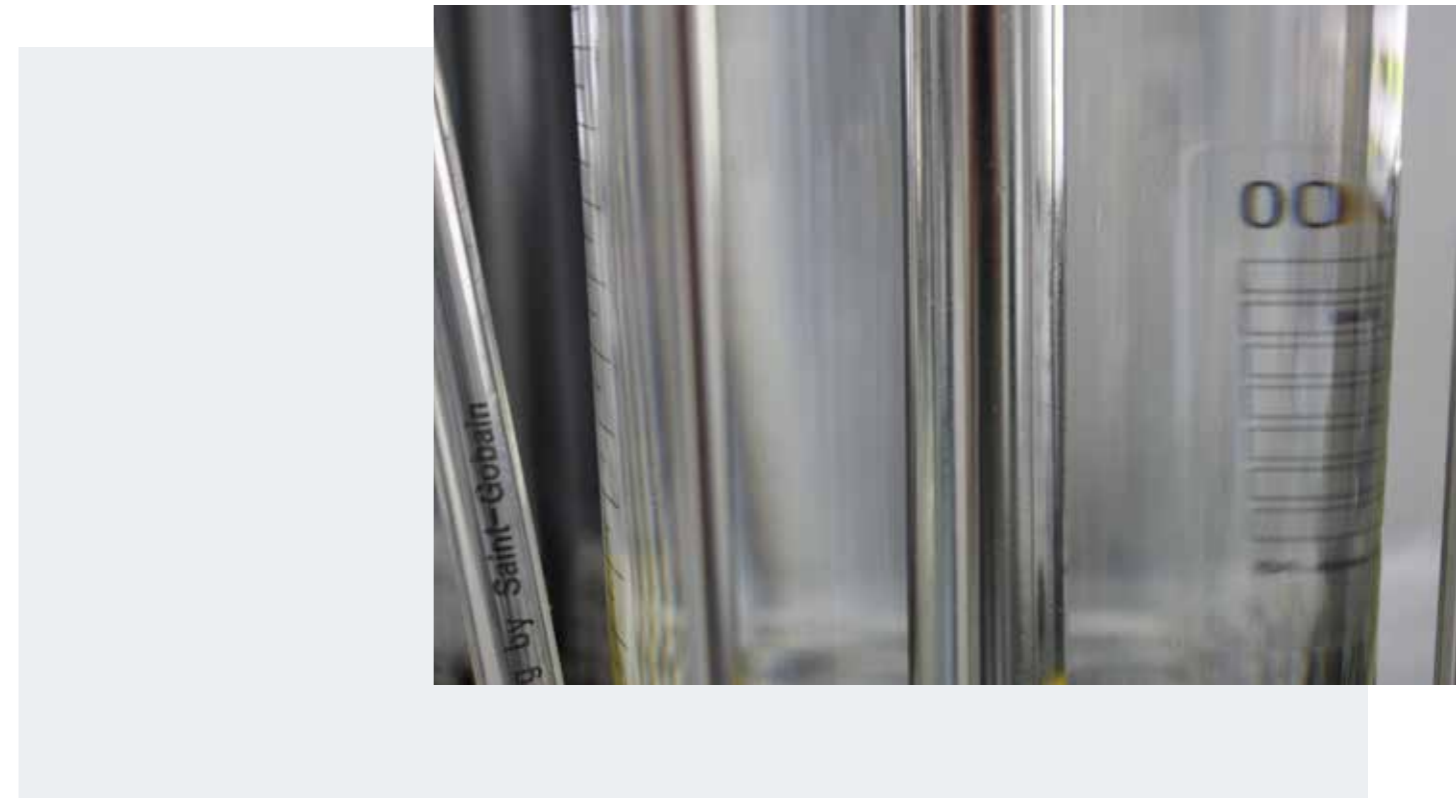
<http://www.ime.fraunhofer.de/en/publikationen/jahresberichte.html>

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PUBLICATIONS





A - C

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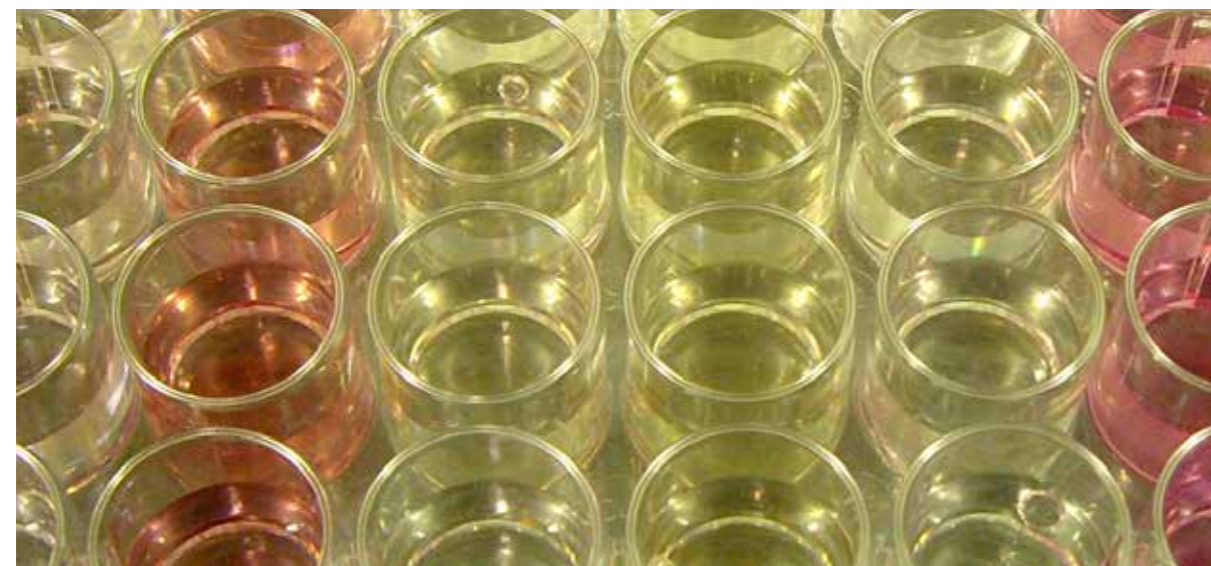
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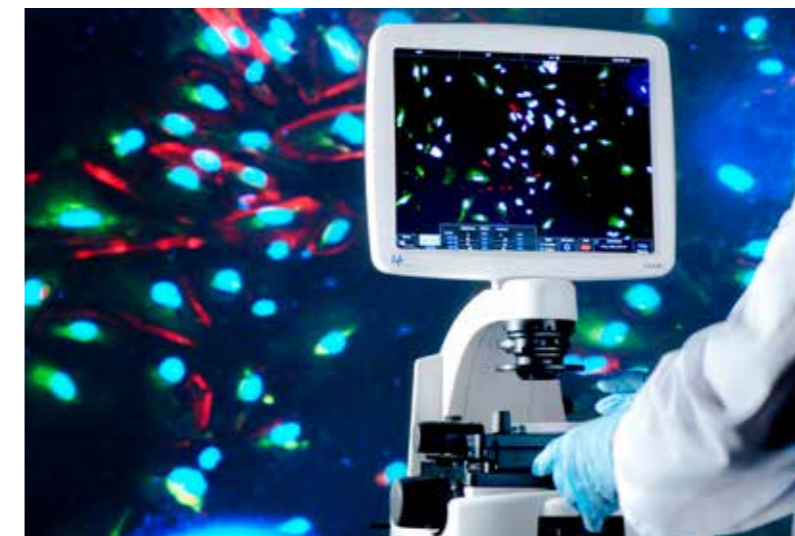
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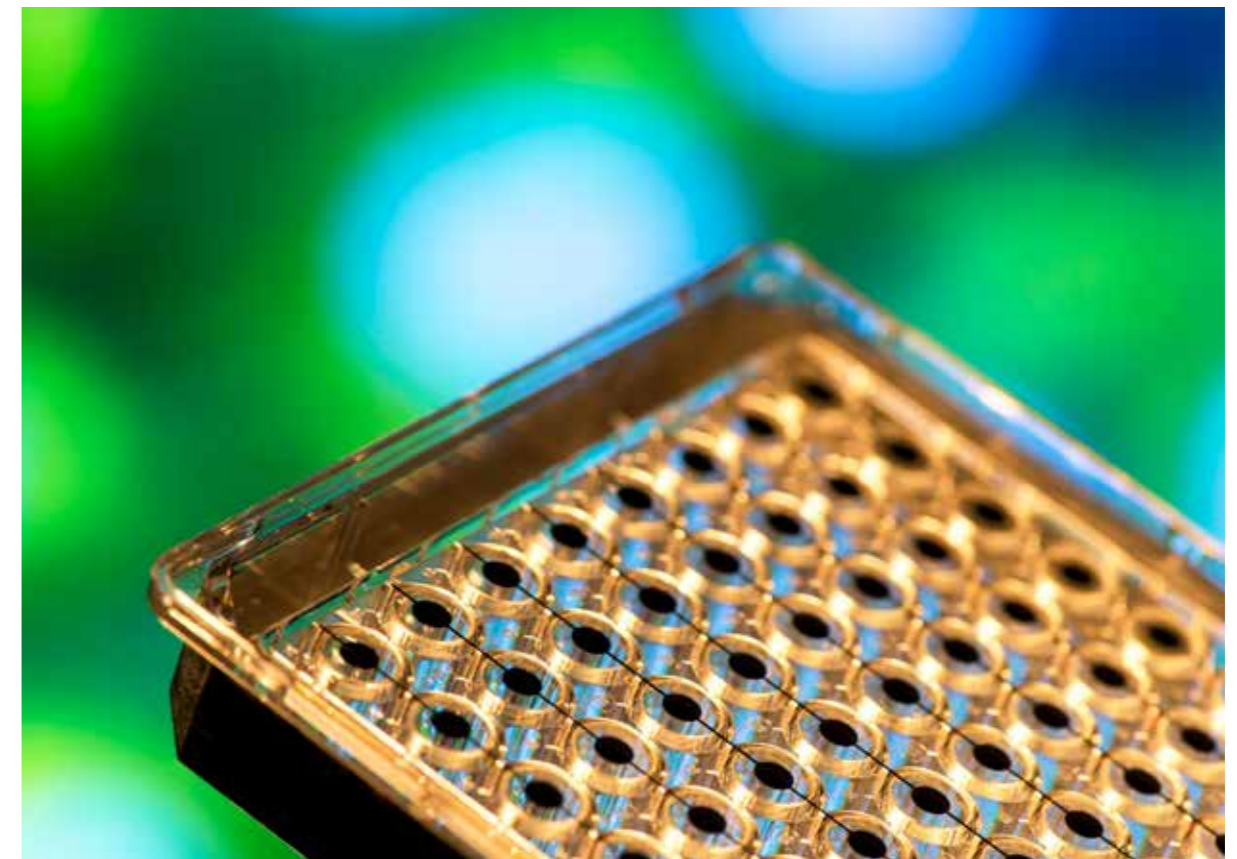
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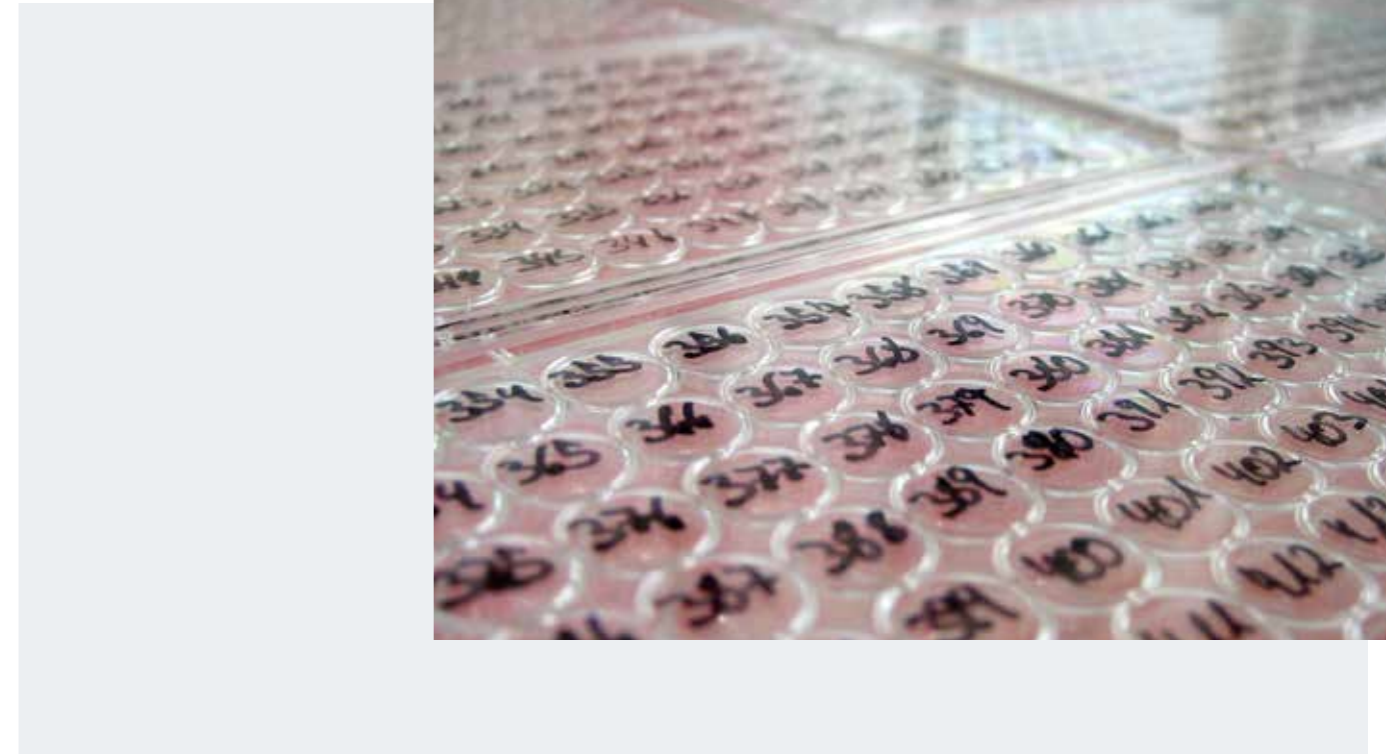
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PATENTS





PATENTS

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Patents issued in 2016

Geisslinger, G., Scholich, K., Michaelis, M.
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FR: EP 2 796 547 B1
DE: 602013011337.8
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AT: EP 2 796 547 B1

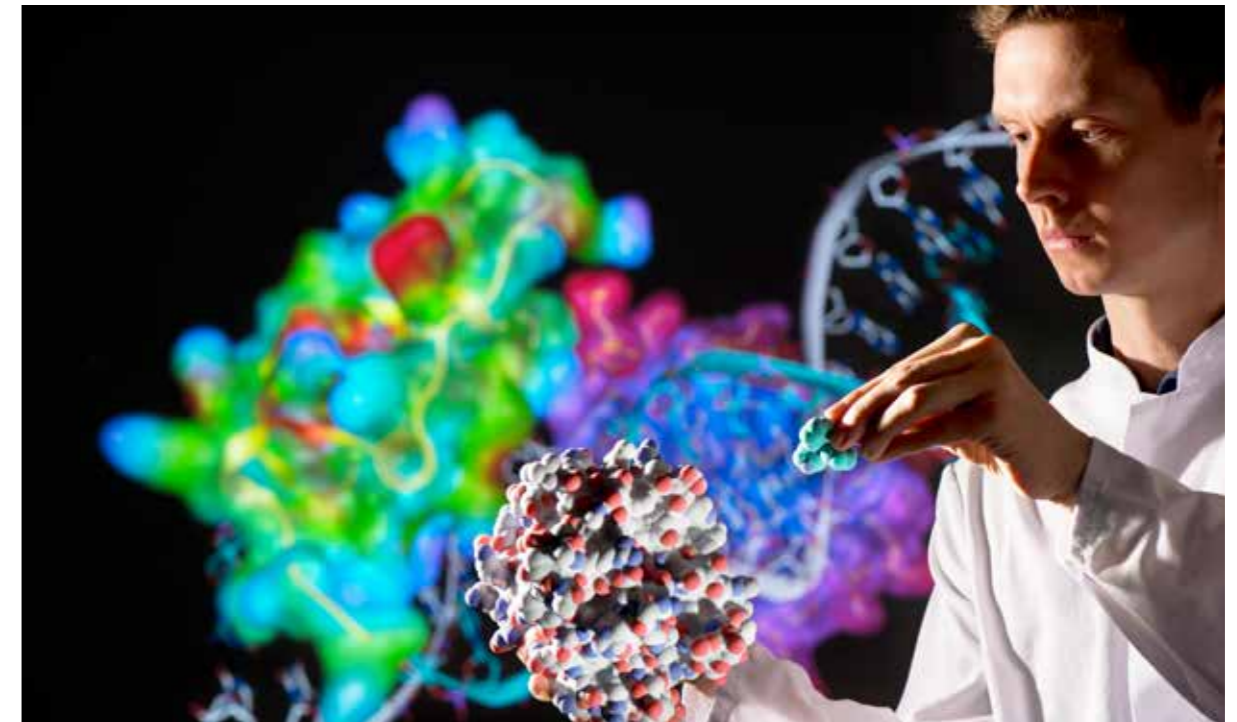
Tegeder, I., Geisslinger, G.
Novel Treatment of Multiple Sclerosis (MS).
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Kirchhoff, J., Schillberg, S., Schiermeyer, A., Schinkel, H., Fischer, R.
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UA: 112546

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Immuno-RNA-Constructs.
NL: EP 1 976 564 B1
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DOCTORAL,
MASTER'S/DIPLOMA
AND BACHELOR'S
THESES





DOCTORAL, MASTER'S/DIPLOMA AND BACHELOR'S THESES

Doctoral Theses

Altenrath, Kai:

Die Bedeutung des säuresensiblen Rezeptors GPR4 bei der peripheren Nozizeption.

Goethe-Universität Frankfurt

Beilstein, Kim:

Posttranskriptionelle Genregulation: Artifizielle Riboswitches eukaryotische Genschalter sowie Untersuchung der 5-Lipoxygenase Genexpression.

Goethe-Universität Frankfurt

Berges, Nina:

Novel cell-based assays for high content screening technologies applied to microtubule dynamics, phage display and receptor signaling.

RWTH Aachen University

Boes, Alexander:

Generation and evaluation of a multi-stage multi-component malaria vaccine cocktail produced in *Nicotiana benthamiana*.

RWTH Aachen University

Boß, Marcel:

Metabolismus von Makrophagen während Hypoxie oder Adipositas.

Goethe-Universität Frankfurt

Dillmann, Christina:

The impact of sphingosine-1-phosphate on plasmacytoid dendritic cells.

Goethe-Universität Frankfurt

Eberle, Max:

Die Rolle der Ceramidsynthese 6 bei der Pathogenese von Multipler Sklerose.

Goethe-Universität Frankfurt

Fan, Rong:

Process monitoring and control using innovative optical sensors for fermentative lactic acid production in membrane bioreactor system.

Technische Hochschule Mittelhessen – JLU Gießen

Fritsch, Leonie:

Next-generation sequencing-based amplicon sequencing is a novel method for the detection of breeding relevant traits in barley (*Hordeum vulgare*).

RWTH Aachen University

King-Himmelreich, Tanja:

AMP-activated kinase (AMPK) in inflammatory pain: impact of life style and age.

Goethe-Universität Frankfurt

Kleinschmidt, Thea Katherine:

Structure-function studies of leukotriene C4 synthase and inhibitor development.

Goethe-Universität Frankfurt

Kunze, Michael:

Identifikation von Translations-regulierten hnRNP-A1 Zielproteinen.

Goethe-Universität Frankfurt

Laibach, Natalie:

Functional characterization of the rubber elongation factor protein family in *Arabidopsis thaliana* and *Taraxacum brevicorniculatum*.

WWU Münster

Lehmann, Christoph:

Mechanistische Studien zur Biosynthese von entzündungsauflösenden Lipoxinen und Resolvinen.

Goethe-Universität Frankfurt

Mika, Nicole Jeanette:

Charakterisierung neuartiger insektenassoziiertes Peptidasen für die Lebensmittelbiotechnologie.

JLU Gießen

Mladenov, Radoslav:

Evaluation of FC-directed immunotherapeutic strategies to manipulate

macrophages in *in vitro* and *ex vivo* models of chronic inflammation.

RWTH Aachen University

Moser, Daniel:

Entwicklung und Evaluation neuer Ansätze in der Pharmakophorbasierenden Wirkstoffsuche.

Goethe-Universität Frankfurt

Niesen, Judith:

Specific targeting of prostate cancer using prostate specific membrane antigen (PSMA).

RWTH Aachen University

Ören, Bilge:

The role of macrophage-derived NGAL in tumor growth and cancer progression.

Goethe-Universität Frankfurt

Röhrich, Rene:

HPLC/ESI-QTOF-HRMS-Screening von bioaktiven Naturstoffen aus Insekten- und Pilzextrakten.

JLU Gießen

Scholl, Carola Friederike:

Modulation of microRNA processing by 5-Lipoxygenase.

Goethe-Universität Frankfurt

Schuler, Sören:

(Un)expected extensions of the multicatalysis concept.

JLU Gießen

Seidel, Melanie:

Generation of a panel of *Plasmodium falciparum* apical membrane antigen 1-specific human monoclonal antibodies by phage display chain shuffling.

RWTH Aachen University

Sha, Lisa:

The role of Nrf2-/- BMDM ϕ in shaping CD8+ T cell response.

Goethe-Universität Frankfurt

Spohner, Sebastian C.:

Enzymatische Entbitterung von Steviolglykosidgemischen.

Technische Hochschule Mittelhessen – JLU Gießen

Syhr, Katharina:

Charakterisierung der Funktionen von Cystathionin- γ -lyase und P2Y6-Rezeptoren im nozizeptiven System.

Goethe-Universität Frankfurt

Tafferner, Nadja:

Der Einfluss der Alpha-methylacyl-CoA-Racemase und Phytol auf die Pathogenese der Multiplen Sklerose.

Goethe-Universität Frankfurt

Thomas, Dominique:

Nano-Flüssigchromatografie gekoppelt mit Tandemmassenspektrometrie zur Quantifizierung von Lipidmediatoren in biologischen Matrices.

Goethe-Universität Frankfurt

Vogt, Dominik:

Entwicklung und Charakterisierung von Enzym-Inhibitoren des Eicosanoid- und Sphingolipid-Metabolismus Synthese, Analytik und Struktur-Wirkungsbeziehungen.

Goethe-Universität Frankfurt



Wittmann, Sandra Kerstin:

Evaluierung von Inhibitoren der Leukotrienbiosynthese.

Goethe-Universität Frankfurt

Woltersdorf, Stefano:

Entwicklung neuartiger Modulatoren der Arachidonsäurekaskade.

Goethe-Universität Frankfurt

Zschiebsch, Katrin:

Tetrahydrobiopterin attenuates DSS-evoked colitis in mice by rebalancing redox and lipid signaling.

Goethe-Universität Frankfurt

Bachelor's, Master's/Diploma and Doctoral Theses

	Bachelor's Theses (BSc)	Master's (MA) or Diploma Theses	Doctoral Theses	Total
IME-MB	15	15	7	37
IME-AEBR	6	18	5	29
IME-TM	2	14	20	36
IME	23	47	32	102



NETWORKS IN SCIENCE AND INDUSTRY





International activities and cooperation with the industry

The Fraunhofer IME cooperates with many international research partners and remains in close contact with universities and other research organizations. The aim is to recognize trends and developments as they emerge, and to develop and implement novel research strategies and technologies. At this point, we would like to emphasize the close cooperation with the Center of Systems Biotechnology CSB, Fraunhofer Chile, and the Center for Molecular Biotechnology CMB, Fraunhofer USA, in Delaware.

In 2016, the Fraunhofer IME co-operated with around 100 national and international industrial clients and several international industrial associations for whom confidential projects were carried out.

Lecturing Assignments

Cooperation with RWTH Aachen University

We have close ties with RWTH Aachen University in terms of personnel and basic research areas. The Fraunhofer IME offers Diploma, Bachelors, Masters and PhD courses in association with the RWTH as well as lectures, practical courses and seminars.

The Fraunhofer IME also gives lectures in applied ecology and collaborates with the RWTH Research Institute for Ecosystem Analysis and Assessment (gaiac), performing mesocosm and other ecotoxicological studies for industrial clients.

Additional Lecturing Assignments

Dr. Mark Bücking and Dr. Matthias Kotthoff hold lectures in the degree program food chemistry at the Bergische Universität Wuppertal.

Prof. Dr. Harald Burkhardt is Head of the Division of Rheumatology at the University Hospital Frankfurt/Main and Professor of Internal Medicine/Rheumatology at the Goethe University Frankfurt/Main.

Dr. Natasja de Bruin holds seminars at the Goethe University Hospital Frankfurt/Main and is guest lecturer at the Donders institute for Brain Cognition and Behavior, MSc Cognitive Neuroscience (Radboud University Nijmegen, the Netherlands).

Prof. Dr. Carsten Claussen is Honorary Professor for Information Systems at the Heinz-Nixdorf Institute of the University Paderborn.

Dr. Andreas Ernst holds seminars at the Goethe University Hospital Frankfurt/Main.

Dr. Rolf Fendel provides lectures on malaria vaccine development and malaria at the FH Aachen, University of Applied Sciences within the lecture series »Red Biotechnology«.

Dr. Martina Fenske holds lectures for the Ecotoxicology Post-Gradual Training Program of SETAC-EUROPE (German Language Branch) e.V. & Gesellschaft Deutscher Chemiker at the University Heidelberg.

Prof. Dr. Dr. Gerd Geisslinger is Director of the Institute for Clinical Pharmacology of the university medical center Frankfurt/Main.

PD Dr. Bruno Oertel holds seminars at the Goethe University Hospital Frankfurt/Main.

Prof. Dr. Michael Parnham is Professor of Pharmacology and Toxicology in the Faculty of Biochemistry, Chemistry and Pharmacy at Goethe University Frankfurt/Main.

Dr. Ole Pless and Prof. Dr. Carsten Claussen hold lectures, seminars and work placements as part of the academic linking of the IME-ScreeningPort to the Faculty of Medicine of the University Hamburg (UKE).

Prof. Dr. Dirk Prüfer is Professor of Plant Biotechnology at the University Münster.

Prof. Dr. Christoph Schäfers holds an Extraordinary Professorship for Eco(system) toxicology at the WWU Münster.

Prof. Dr. Marc F. Schetelig is Professor for Insect Biotechnology in Plant Protection at the Justus-Liebig University Giessen.

Dr. Andreas Schiermeyer and Holger Spiegel provide lectures on Plant Biotechnology at the FH Aachen, University of Applied Sciences.

PD Dr. Susanne Schiffmann holds seminars at the Goethe University Hospital Frankfurt/Main.

Prof. Dr. Stefan Schillberg is Honorary Professor at the Justus-Liebig University Giessen.

Prof. Dr. Christian Schlechtriem is Honorary Professor for Ecotoxicology at the University Siegen.

Matthias Teigeler holds lectures on Ecotoxicology at the Technische Hochschule Bingen (technical university).

Prof. Dr. Andreas Vilcinskis is Professor for Applied Entomology and Director of the recently established Institute for Insect Biotechnology, both at the Justus-Liebig University Giessen.

Dr. Carmen Walter and Dr. Miriam Wolters hold seminars at the Goethe University Hospital Frankfurt/Main.



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Bundesinstitut für Risikobewertung (BfR): Kommission für Pflanzenschutzmittel und ihre Rückstände
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BVL, Expertengruppe zur Erstellung einer Richtlinie für Fischfütterungsstudien
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German Management Committee
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DAkKS, Fachbegutachter bei der

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DFG, Fachkollegium, Medizin
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DFG, Senatskommission für klinische Forschung
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DFG, Allianz-AG „Infrastrukturen in der terrestrischen Forschung“
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Dr. Andrea Wenzel

DIBT, Projektgruppe „Modellierung“ des Deutschen Instituts für Bautechnik
Dr. Michael Klein

DIN NA 062 Normenausschuss Materialprüfung, – NA 062-02-93-AA Photokatalyse, AK2 Luftreinhaltung
Dr. Michael Hüben

DIN NA 119 Normenausschuss Wasserwesen (NAW), – NA 119-01-02-05 UA Elutionsverfahren
Dr. Dieter Hennecke

– NA 119-01-02-02-01 AK Bioverfügbarkeit
Dr. Kerstin Derz

– NA 119-01-02-04 UA Biologische Verfahren
Dr. Kerstin Hund-Rinke

– NA 119-01-02 AA Abfall- und Bodenuntersuchung, UA 1 Probenahme
Karlheinz Weinfurtnner

– NA 119-01-02-06 UA Bodenschutz, Entsorgung, Altlastensanierung, UA 2 Entsorgung
Karlheinz Weinfurtnner

DIN NA 172-00-10 GA Gemeinschaftsarbeitsausschuss NAGUS/NAL, Nachhaltigkeitskriterien für Biomasse
Karlheinz Weinfurtnner

Dutch NeuroFederation
Dr. Natasja de Bruin

EFSA, Scientific Panel on Plant Protection Products and their Residues
Dr. Michael Klein

– EFSA PPR Panel, Working Group on non-target arthropods and in-soil risk assessment
Dr. Michael Klein (Rapporteur)

– EFSA PPR Panel, Working Group on TK-TD-Modelling
Dr. Michael Klein

– EFSA Working Group on the new guidance document about persistence in soil
Dr. Michael Klein

Food and Agricultural Organization of the United Nations (FAO)
Scientific consultant and expert: Prof. Dr. Marc F. Schetelig

FBU, Fachbeirat Bodenuntersuchungen
Dr. Dieter Hennecke

Fachbeirat zum Masterstudiengang „Boden, Gewässer, Altlasten“ an der Hochschule/Universität Osnabrück
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Dr. Natasja de Bruin

FET, Directorate General for Communications Networks, Content and Technology „Future & Emerging Technologies“, Advisory Group, European Commission
Prof. Dr. Rainer Fischer

FOCUS (Forum for international coordination of pesticide fate models and their use), Work group „Version Control“
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Forschungsausschuss des Fachverbandes „Angewandte Photokatalyse“ im Verband der Mineralfarbenindustrie
Dr. Kerstin Hund-Rinke

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– Arbeitskreis Chemikalienbewertung
Dr. Martin Müller

– Arbeitskreis Umweltmonitoring
Leitung: Dr. Heinz Rüdell

GDK (Gemeinschaft Deutscher Kryobanken)
Kassenprüfer: Dr. Heinz Rüdell

Hochschulforum der Hamburger Wirtschaft
Prof. Dr. Carsten Claussen

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Initiative Gesundheitsindustrie Hessen
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International Atomic Energy Agency (IAEA)
Scientific consultant: Prof. Dr. Marc F. Schetelig

ISO/TC 190 SC2, WG10 Soil quality – Elaborating general aspects of sampling
Karlheinz Weinfurtnner

ISO/TC 190 SC3, WG11 Explosive compounds
Dr. Dieter Hennecke

ISO/TC 190 SC7, WG6 Leaching tests
Dr. Dieter Hennecke

ISO/TC 190 SC7, WG8 Bioavailability
Dr. Dieter Hennecke

ISPE, Community of Practice: Process analytical technologies, Active Pharmaceutical Ingredients
Dr. Jürgen Drossard

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Titular Member: Dr. Heinz Rüdell



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Kommission zur Bewertung was-sergefährdender Stoffe (KBWS) des BMU

Prof. Dr. Christoph Schäfers

Lebensmittelwirtschaft

Wissenschaftlicher Beirat:
Dr. Mark Bücking

Lundbeckfonden Center of Excellence Nanomedicine Research Center for Cancer Stem Cell Targeting Therapeutics (NanoCAN) (Odense, Denmark)

Scientific advisory board member:
Dr. Ole Pless

NORMAN – Network of reference laboratories, research centres and related organisations for monitoring of emerging environmental substances – Working Group “Prioritization of emerging substances”

Dr. Heinz Rüdél

OECD Expert Group on Fish Bioaccumulation

Prof. Dr. Christian Schlechtriem

OECD Fish Drafting Group

Prof. Dr. Christoph Schäfers,
Matthias Teigeler

OECD Validation Management Group on Ecotoxicity Testing (VMG-eco)

Prof. Dr. Christoph Schäfers, Matthias Teigeler (Invited National Experts)

OECD Working Party on Manufactured Nanomaterials (WPMN)

Dr. Kerstin Hund-Rinke

Pharmadialog der Bundesregierung

Prof. Dr. Rainer Fischer

Research Data Alliance, GEDE – Group of European Data Experts in RDA

Dr. Manfred Kohler, Dr. Lea A.I. Vaas

SETAC Europe Advisory Group on Mechanistic Effect Models for Ecological Risk Assessment of Chemicals (MEMoRisk)

Co-chair: Dr. Udo Hommen

SETAC Global Advisory Group on Bioaccumulation Science

Prof. Dr. Christoph Schäfers
Co-chair: Prof. Dr. Christian Schlechtriem

SETAC Global Advisory Group on Plants

Steering Committee: Dr. Udo Hommen

SETAC Global Advisory Group on Animal Alternatives in Environmental Science

Dr. Martina Fenske;
Prof. Dr. Christian Schlechtriem

SETAC Europe 26th Annual Meeting, Nantes, 2016

Scientific Committee: Dr. Udo Hommen

Single Technologies (Stockholm, Sweden)

Scientific advisor: Dr. Sheraz Gul

SLAS Europe Education Committee

Dr. Sheraz Gul

Society for Neuroscience

Dr. Natasja de Bruin

Society of Laboratory Automation Sciences (SLAS)

Vice Chair of European Council:
Dr. Philip Gribbon

Stiftung für Unternehmensrecht an der Heinrich Heine Universität Düsseldorf

Kuratoriumsmitglied:
Prof. Dr. Carsten Claussen

Stiftungsrat der Dr. Robert Pflieger Stiftung

Prof. Dr. Dr. Gerd Geisslinger

Stiftungsrat der Freundlich-Stiftung

Prof. Dr. Dr. Gerd Geisslinger

UBA, Arbeitskreis Fortentwicklung von Prüfmetho-den im Rahmen des Stoffrechts, AK Ökotoxikologie, Akkumulation und Abbau in der Umwelt

Prof. Dr. Christoph Schäfers

VDI/VDE »Datenmanagement im Bereich Life Sciences« VDI 6320

Vice chairman: Dr. Manfred Kohler

Wissenschaftlicher Beirat des Life Science-Center der Universität Hohenheim

Prof. Dr. Rainer Fischer

World Health Organization (WHO), Vector Control Advisory Group (VCAG)

Prof. Dr. Marc F. Schetelig

Organization of Scientific Meetings and Courses (Applied Ecology)

Symposium »Nachhaltige landwirtschaftliche Stoffproduktion«, Schmalleberg, 17.-18.3.2016

Lehrveranstaltung »Grundlagen der Ökotoxikologie« im Rahmen der Ausbildung zum Fachtoxikologen der DGPT (German Society for Experimental and Clinical Pharmacology and Toxicology), Schmalleberg, 27.6.-1.7.2016

Summer School WWU Münster/Universität Siegen: »Aquatische Öko(system)toxikologie«, Schmalleberg, 29.8.-8.9.2016

3. Doktorandentag der GDCh-Fachgruppe Umweltchemie und Ökotoxikologie, Schmalleberg, 20.10.2016

Analysis of Mercury and Methylmercury in Fish.

Training for Bulgarian environmental analysts on behalf of the German Environment Agency, Schmalleberg, 14.-18.11.2016



