

FACTS 2015





With regard to our reporting requirement, we compiled information on publications, patents and theses as well as on our networks and cooperations in science and industry in this separate booklet. You can also download the „FACTS 2015“ of the Fraunhofer IME as well as our corresponding annual report from our website:

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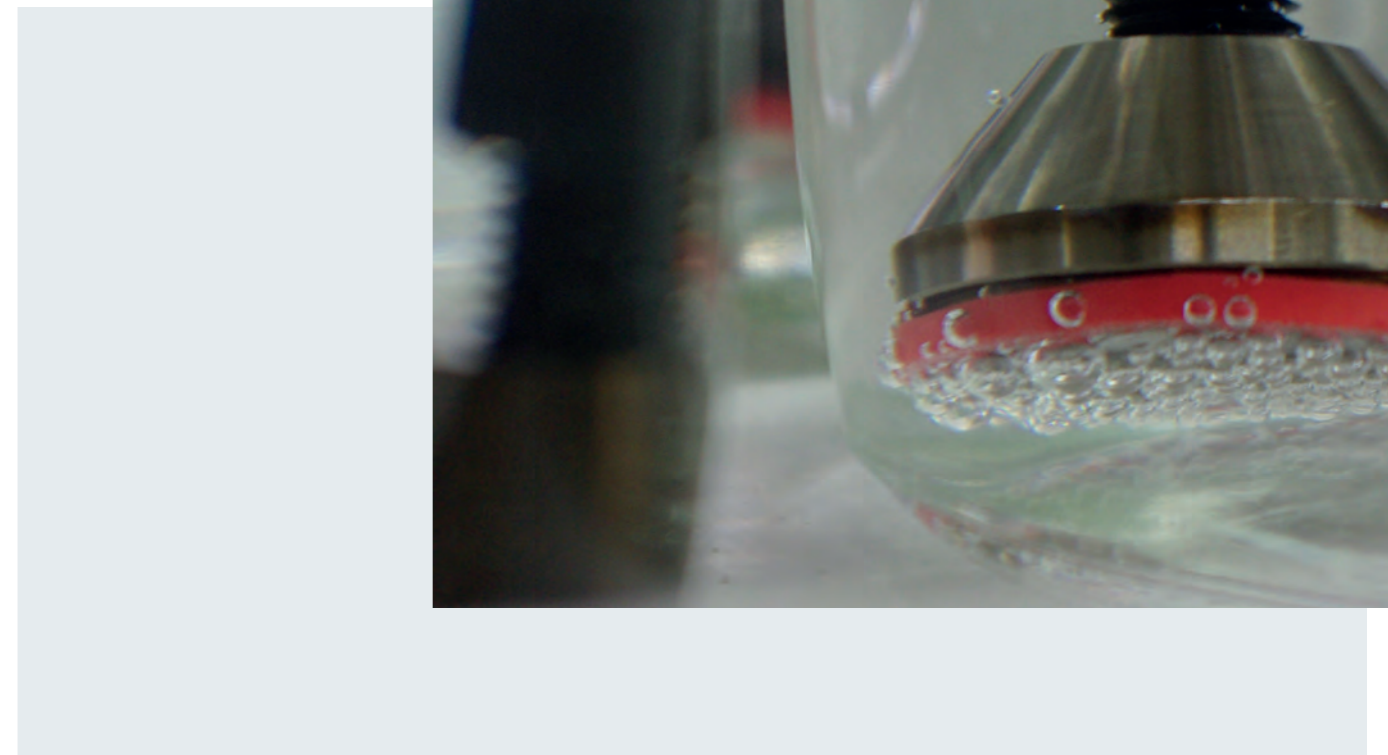
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PUBLICATIONS





A - C

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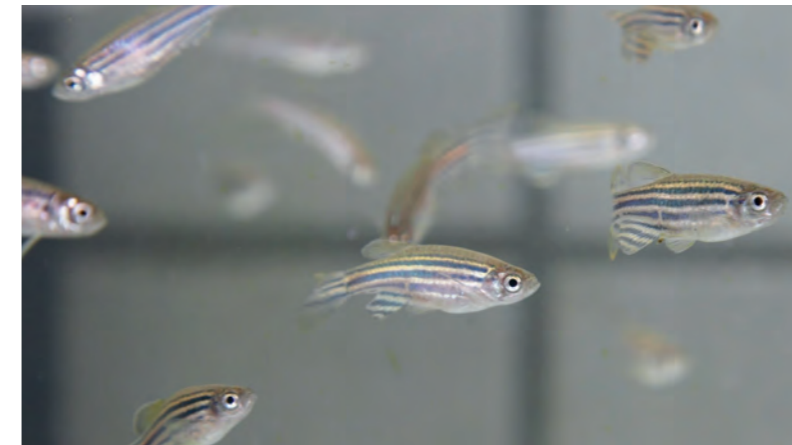
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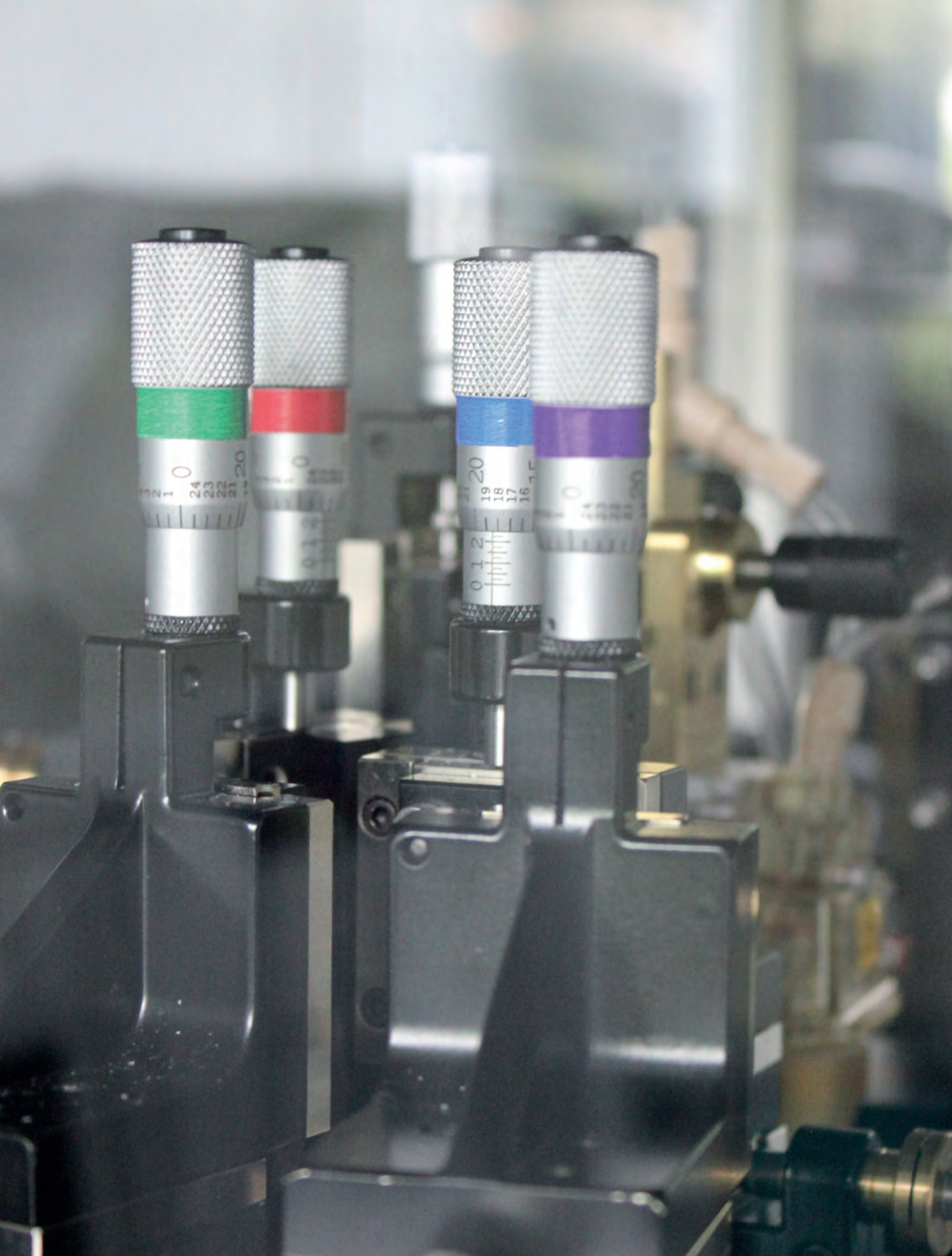
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Platform Presentations and Posters Applied Ecology 2015

http://www.ime.fraunhofer.de/content/dam/ime/de/documents/AE/Presentations_Posters%20Applied%20Ecology_2015.pdf





🏆 PATENTS





PATENTS

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An immunotoxin for use in the treatment of leishmaniasis.
EP 15 151 876.8

Hristodorov, D., Thepen, T., Barth, S.
Use of CD-64-blocking agents as enhancer of an anti-TNF-alpha antibody therapy.
PCT/EP2015/056622

Boes, A., Spiegel, H., Edgü, G., Beiss, V., Sack, M., Reimann, A., Fischer, R.
Three component-multistage malaria vaccine
PCT/EP2015/070044

Boes, A., Spiegel, H., Edgü, G., Beiss, V., Sack, M., Reimann, A., Fischer, R.
Multi-component-multistage malaria vaccine.
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Salzig, M., Vilcinskas, A., Fischer, R.
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von Knethen, A., Parnham, M., Sha, L.
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EP 15 181 800.2

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PCT/EP2015/066085

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N-terminally truncated interleukin-38.
PCT/EP2015/066084

Sisignano, M., Brenneis, C., Geisslinger, G., Scholich, K., Zinn, S.
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PCT/EP2015/068767

Fendel, R., Kapelski, S., Barth, S., Fischer, R., Reimann, A.
Anti-parasitic complexes.
PCT/EP2015/069247

Scholich, K., Zinn, S., Geisslinger, G., de Bruin, N.
BLT2 antagonists for the treatment of pain.
PCT/EP2015/074520

Fischer, R., Reimann, A., Maskus, D., Fendel, R., Klockenbring, T., Barth, S.
Anti-plasmodium parasite antibodies.
EP 15 163 297.3

Kreuzaler, F., Nölke, G., Schillberg, S., Barsoum, M., Fischer, R.
Genetically modified higher plants with increased photosynthesis and/or biomass production, methods and uses thereof.
PCT/EP2015/077803

Genoveva, O., di Fiore, S., Fischer, R.
Method for providing stable isoindole derivatives.
US 14/944,662

Edgü, G., Sack, M., Beiss, V., Boes, A., Spiegel, H., Reimann, A., Fischer, R.
Malaria immunoassemblins – combinatorial vaccines against Plasmodium falciparum.
PCT/EP2015/076194

Nölke, G., Schubert, M., Schillberg, S.
Novel aflatoxin and fungal infection control methods.
PCT/EP2015/057943

Barth, S., Fischer, R., Hussain, A.
Novel specific photoimmuno-therapeutics for detection and elimination of skin cancer cells.
PCT/EP2015/063422

Stein, C., Mladenov, R., Stockmeyer, B., Barth, S., Hein, L., Fischer, R.
Anit-CD89 cytotoxic complex.
PCT/EP2015/056386

Nüsing, R.M., Bernau, M., Parnham, M., Geisslinger, G.
(R)-Fluriprofen for the prevention and/or treatment of diabetes.
EP 15 193 690.3

Wacker, M., Beyer, S., Parnham, M., Xie, L., Mäntele, W., Vogel, V.
Composition comprising a biocompatible and biodegradable polymer, nanocarriers and a drug and methods of making and using the same.
EP 15 193 382.7

Jennewein, S., Gaida, S., McElroy, C., Fischer, R.
Recombinant cell and 1,4-butanediol production method.
PCT/JP2015/74979

Patents issued in 2015

Barth, S., Tur, M. K., Stöcker, M., Fischer, R.
Immunokinases.
US patent: US 9,045,739 B2

Barth, S., Schmies, S., Kolberg, K., Püttmann, C.
Monoclonal antibody for the detection of SNAP/CLIP tag.
US patent: US 9,079,963

Barth, S., Schmies, S., Kolberg, K., Püttmann, C.

Monoclonal antibody for the detection of SNAP/CLIP tag.
British patent: EP (GB) 2 782 936
French patent: EP (FR) 2 782 936
German patent: DE 60 2012 011 414.2
Spanish patent: EP (ES) 2 782 936 B1
Swiss patent: EP (CH) 2 782 936

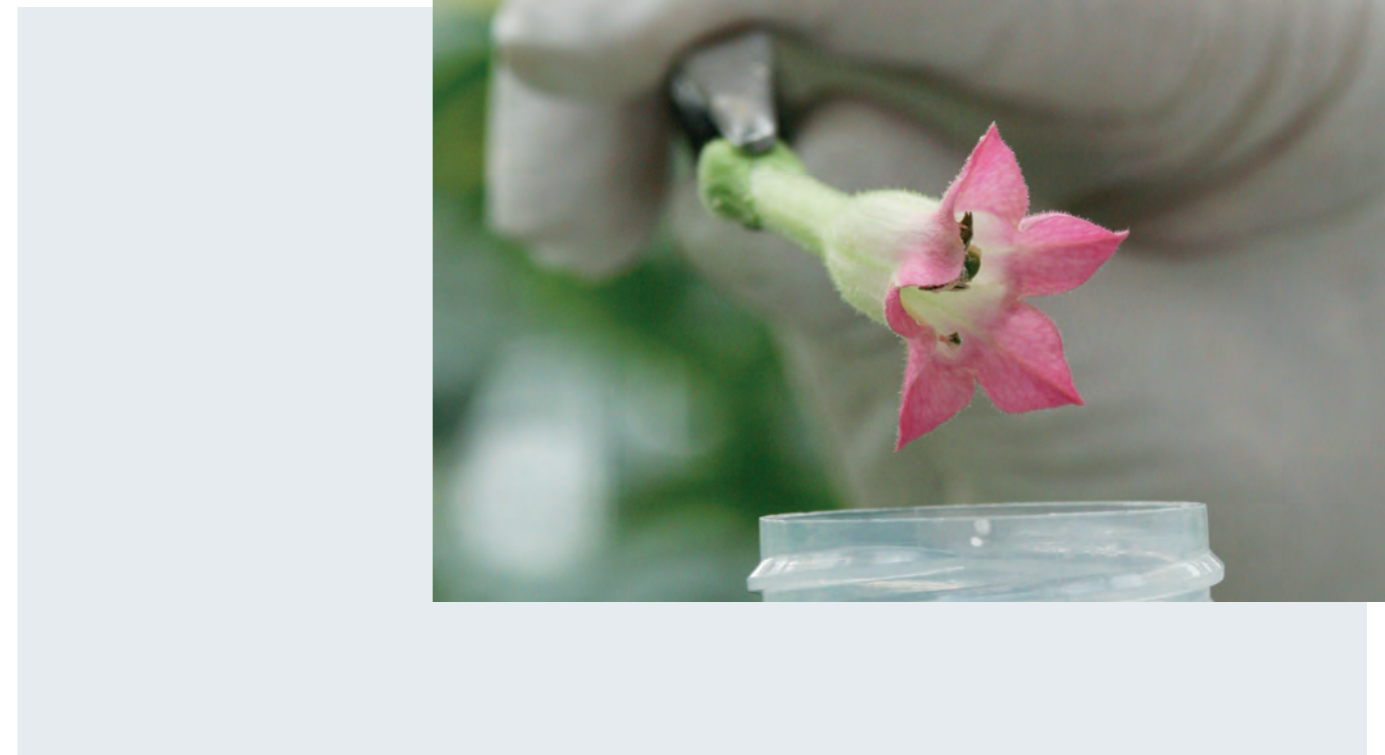
Jennewein, S., Engels, B., Grothe, T., Stadler, M.
Protoilludene synthase.
US patent: US 9,005,939
Chinese patent: CN 103052709 B

Scholich, K., Geisslinger, G.
Use of S1P.
Chinese patent: CN 1838961 B





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





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

Doctoral Theses

Ahvani, Houtan:
Characterization and subcellular localization of endomembrane proteases from tobacco BY-2 cells.
RWTH Aachen University

Barthelmes, Julia (geb. Männich):
Die Rolle der Ceramidsynthase 2 bei der Pathogenese von Multipler Sklerose.
Goethe-Universität Frankfurt

Busch, Saskia:
Regulation of the 5-lipoxygenase by miRNA.
Goethe-Universität Frankfurt

Delov, Vera:
Fluoreszierende Toxizitätspunkte als vielversprechende Werkzeuge zur Weiterentwicklung des Fischembryo-tests für praktische Screening-Anwendungen.
RWTH Aachen University

Fuhrmann, Dominik:
Chronic hypoxia in human macrophages - adaption and functional consequences.
Goethe-Universität Frankfurt

Gilbert, Bianca:
Die Charakterisierung der humanen 5-Lipoxygenase als direktes Targetgen des Tumorsuppressors p53 und seine Relevanz für die Tumorgenese.
Goethe-Universität Frankfurt

Henke, Nina:
Role of HIF-1 α and HIF-2 α in macrophages during tumor progression.
Goethe-Universität Frankfurt

Ibrahim, Lara:
Identification and modelling of a representative vulnerable fish species for pesticide risk assessment in Europe.
RWTH Aachen University

Kemmerer, Marina:
Elucidation of lipid metabolism pathways mediated by AMPK and nuclear receptors PPARdelta and LXRAalpha in human macrophages.
Goethe-Universität Frankfurt

Knape, Tilo:
Die Antagonisierung von PPAR γ als neues Therapiekonzept bei Sepsis.
Goethe-Universität Frankfurt

Mora, Javier:
Novel IL-1 family ligands and receptors in the interaction of macrophages with apoptotic cells.
Goethe-Universität Frankfurt

Salgado, Daniela:
Purification and characterization of the plant-produced human surfactant protein D (hSP-D).
RWTH Aachen University

Scherzberg, Maria-Christina:
Molecular Characterization of anticancer and metabolic activities of resveratrol analog 3,4',5-(Z)-trihydroxystilbene and interaction with AMPK inhibitor compound C.
Goethe-Universität Frankfurt

Schmitz, Katja:
The role of endocannabinoid modulators on the pathogenesis and therapy in different mouse models of multiple sclerosis and metabolic syndrome.
Goethe-Universität Frankfurt

Schröder, Mirjam:
Isolierung und Charakterisierung der isolierten regulatorischen Domäne der humanen 5 Lipoxygenase.
Goethe-Universität Frankfurt

Schubert, Max:
Herstellung und Charakterisierung von rekombinanten scFv-Fusionsproteinen zur Generierung Aspergillus flavus -resistenter Maispflanzen.
RWTH Aachen University

Wanger, Ruth:
Regulation von Ceramidsynthasen in Kolonkarzinom-Zellen.
Goethe-Universität Frankfurt

Wegner, Marthe-Susanna:
Hormonelle Regulation von Ceramidsynthasen in Brustkrebszellen.
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	19	21	16	56
IME-AE	2	3	2	7
IME	21	24	18	63





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.

In 2015, 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

Fraunhofer IME has close ties with RWTH Aachen University in terms of personnel and basic research areas. Prof. Dr. Rainer Fischer is Chair and Director of the Institute for Molecular Biotechnology (IMB). The Fraunhofer IME offers Diploma, Bachelors, Masters and PhD courses in association with the RWTH Aachen University as well as lectures, practical courses and seminars.

The Fraunhofer IME Applied Ecology Division 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 University of Wuppertal.

Dr. Natasja de Bruin holds seminars at the Goethe University Hospital Frankfurt 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 Paderborn University. He also holds lectures, seminars and work placements as part of the academic linking of the IME-ScreeningPort to the Faculty of Medicine of the University of Hamburg (UKE).

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

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 of Heidelberg.

Prof. Dr. Dr. Gerd Geisslinger is director of the Institute for Clinical Pharmacology of the University Medical Center Frankfurt.

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

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

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

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

Dr. Nicole Raven, Dr. Andreas Schiermeyer, Holger Spiegel and Prof. Dr. Stefan Schillberg provide lectures on Plant Biotechnology at the Fachhochschule, Aachen; Prof. Schillberg is also Honorary Professor at the Justus-Liebig University of Giessen.

Prof. Dr. Christoph Schäfers holds an extraordinary professorship for eco(system)toxicology at the University of Münster.

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

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

Matthias Teigeler provides lectures on Ecotoxicology at the Fachhochschule Bingen.

Prof. Dr. Andreas Vilcinskis is Professor for Applied Entomology at the Justus-Liebig University of Giessen.

Dr. Björn Windshügel holds lectures at the Jacobs University of Bremen.



NETWORKS IN SCIENCE AND INDUSTRY

Memberships of Editorial Boards and Committees

Scientific Journals

Current Research in Drug Discovery
Editorial Board: Dr. Sheraz Gul

Drug Target Review
Editor in chief: Dr. Sheraz Gul

Environmental Science and Pollution Research, Springer
Co-editor of the series Chemical and Biological Environmental Monitoring:
Dr. Heinz Rüdél

Environmental Sciences Europe, Springer
Advisory Board: Dr. Kerstin Hund-Rinke

European Pharmaceutical Review
Editorial board: Dr. Sheraz Gul

Fraunhofer Group for Life Sciences
Chairman: Prof. Dr. Rainer Fischer

Frontiers in Plant Biotechnology, Frontiers Media S.A.
Associate Editor: Prof. Dr. Dirk Prüfer

Handbuch der Bodenuntersuchung, Wiley-VCH
Beirat: Dr. Dieter Hennecke

Journal of Applied Ichthyology, Wiley-Blackwell;
Editorial Board:
Prof. Dr. Christian Schlechtriem

Journal of Pharmaceutics
Editorial Board: Dr. Sheraz Gul

Plant Cell Reports, Springer
Editorial Board: Prof. Dr. Stefan Schillberg

Transgenic Research, Kluwer Academic Publishers
Associate Editor: Prof. Dr. Stefan Schillberg

Committees

Altmetric
Ambassador: Dr. Sheraz Gul

Anti-Doping-Beauftragter des Landessportbundes Hessen
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Business Advisory Board: Dr. Sheraz Gul

Ausschuss für Innovation, Handelskammer Hamburg
Prof. Dr. Carsten Claussen

BioÖkonomieRat, AG Biotechnologie
Prof. Dr. Rainer Fischer

BMELV, Wissenschaftlicher Beirat für Düngungsfragen
Stellvertretende Vorsitzende: Dr. Kerstin Hund-Rinke

Bundesinstitut für Risikobewertung (BfR): Kommission für Kontaminanten und andere gesundheitlich unerwünschte Stoffe in der Lebensmittelkette
Dr. Mark Bücking

Bundesinstitut für Risikobewertung (BfR): Kommission für Pflanzenschutzmittel und ihre Rückstände
Dr. Michael Klein

BVL, Expertengruppe zur Erstellung einer Richtlinie für Fischfütterungsstudien
Prof. Dr. Christian Schlechtriem

COST Action CM1307, 1406
Management Committee Substitute:
Dr. Sheraz Gul

DAkKS, Fachbegutachter bei der Deutschen Akkreditierungsstelle
Dr. Kerstin Hund-Rinke, Dr. Josef Müller

Deutsche Gesellschaft für industrielle Zelltechnik
Board: Dr. Mira Graettinger

DFG, Steering Group Systembiologie
Prof. Dr. Rainer Fischer

DFG, Fachkollegium, Medizin
Prof. Dr. Dr. Gerd Geisslinger

DFG, Senatskommission für klinische Forschung
Prof. Dr. Dr. Gerd Geisslinger

DFG, Allianz-AG »Infrastrukturen in der terrestrischen Forschung«
Prof. Dr. Christoph Schäfers

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 119-01-02-02-53 AK Sprengstofftypische Verbindungen
Dr. Dieter Hennecke

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

— NA 119-01-02 AA Abfall- und Bodenuntersuchung, UA 1 Probenahme
Karlheinz Weinfurtner

— NA 119-01-02-06 UA Bodenschutz, Entsorgung, Altlastensanierung, UA 2 Entsorgung
Karlheinz Weinfurtner

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

Dutch NeuroFederation
Dr. Natasja de Bruin

EFSA, Scientific Panel on Plant Protection Products and their Residues
Dr. Michael Klein:
— Working Group on the new guidance document about persistence in soil
— Working Group on non-target arthropods and in-soil risk assessment (Rapporteur)

EU-OPENSUREN – The European Research Infrastructure for Chemical Biology
Coordinator: Dr. Philip Gribbon

FBU, Fachbeirat Bodenuntersuchungen
Dr. Dieter Hennecke

Fachbeirat zum Masterstudiengang »Boden, Gewässer, Altlasten« an der Hochschule/Universität Osnabrück
Dr. Kerstin Hund-Rinke

FENS Federation of European Neuroscience Societies
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«
Dr. Michael Klein

Forschungsausschuss des Fachverbandes »Angewandte Photokatalyse« im Verband der Mineralfarbenindustrie
Dr. Kerstin Hund-Rinke

FPI e.V., Food-Processing Initiative
Vorstandsvorsitzender: Dr. Mark Bücking

Forum Gesundheit der Bundesregierung
Prof. Dr. Rainer Fischer

GDCh, Fachgruppe Umweltchemie und Ökotoxikologie
— Arbeitskreis Bodenchemie und Bodenökologie
Leitung: Dr. Dieter Hennecke

— Arbeitskreis Chemikalienbewertung
Dr. Martin Müller

— Arbeitsgruppe Persistenz und Abbaubarkeit im Arbeitskreis Chemikalienbewertung
Dr. Dieter Hennecke, Dr. Markus Simon

— Arbeitskreis Umweltmonitoring
Leitung: Dr. Heinz Rüdél

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

Hochschulforum der Hamburger Wirtschaft
Prof. Dr. Carsten Claussen

House of Pharma and Healthcare
Vorstandsmitglieder: Prof. Dr. Dr. Gerd Geisslinger, Dr. Frank Behrens

ILSI-HESI – Animal Alternatives in Environmental Risk Assessment
Technical Committee

Dr. Martina Fenske

Industrial Quality and Productivity Centre (IQPC)
Pharmaceutical Advisory Board:
Dr. Sheraz Gul

Initiative Gesundheitsindustrie Hessen
Mitglied des Lenkungskreises:
Prof. Dr. Dr. Gerd Geisslinger

International Association of Inflammation Societies (IAIS)
Ex-officio Member:
Prof. Dr. Michael J. Parnham

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

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

IUPAC, Division of Chemistry and the Environment (DCE)
Titular Member: Dr. Heinz Rüdél

IUPAC Subcommittee on Chemical and Biophysical Processes in the Environment
Secretary: Dr. Heinz Rüdél

KGITTC, Korean-German Industrial Technology
Cooperation Committee:
Prof. Dr. Rainer Fischer



NETWORKS IN SCIENCE AND INDUSTRY

Kommission Bodenschutz beim
Umweltbundesamt
Dr. Kerstin Hund-Rinke

Kommission zur Bewertung wasser-
gefährdender 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 Rüdell

OECD Expert Group on Fish Bioaccu-
mulation
Prof. Dr. Christian Schlechtriem

OECD Fish Drafting Group
Prof. Dr. Christoph Schäfers,
Matthias Teigeler

OECD Working Party on Manufac-
tured Nanomaterials (WPMN) – SG4
Drafting Group for Guidance on
Sample Preparation and Dosimetry
(DG-GSPD)
Dr. Kerstin Hund-Rinke

Pharma-Dialog der Bundesregierung
Prof. Dr. Rainer Fischer

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 Environmen-
tal 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

Society for Neuroscience
Dr. Natasja de Bruin

Standardisierungsgremium Big Data
VDI/VDE
Founding member: Dr. Manfred Kohler

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 Prüfmethode im Rahmen des
Stoffrechts, AK Ökotoxikologie,
Akkumulation und Abbau in der
Umwelt
Prof. Dr. Christoph Schäfers

VDI/VDE »Datenmanagement im
Bereich Life Sciences«
Vice chairman: Dr. Manfred Kohler

Wissenschaftlicher Beirat des Life
Science-Center der Universität
Hohenheim
Prof. Dr. Rainer Fischer

Organization of Scientific Meetings and Courses (Applied Ecology)

Workshop “Environmental monitoring of biocides in Europe –
compartment-specific strategies”
Berlin, 25.-26.6.2015; carried out by Fraunhofer IME on behalf of the
German Federal Environment Agency (Umweltbundesamt) and the NORMAN network

Lehrveranstaltung »Grundlagen der Ökotoxikologie«
im Rahmen der Ausbildung zum Fachtoxikologen der DGPT
(German Society for Experimental and Clinical Pharmacology
and Toxicology), excursion day, Fraunhofer IME Schmallenberg, 24.7.2015

Summer School WWU Münster/Universität Siegen:
»Aquatische Öko(system)toxikologie«
Fraunhofer IME Schmallenberg, 24.8.–4.9.2015

Scientific Workshop on “Identifying limitations of the OECD water-sediment
test (OECD 308) and developing suitable alternatives to assess persistence”
Dübendorf, Switzerland, 6.10.2015, organized by EAWAG in cooperation
with Fraunhofer IME, ECT and Fraunhofer ITEM



