



IT IS

FOUNDATION
2009

10 YEARS BRINGING PROMISE FOR
THE FUTURE THROUGH RESEARCH

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A DECADE OF ACCOMPLISHMENTS

As the IT'IS Foundation celebrates its tenth anniversary, it is tempting to focus our attention on the many accomplishments that have shaped the Foundation's research agenda. Instead of concentrating on what we have accomplished, the time is right to focus on what is possible to accomplish in the next ten years. When the visionary group of leaders in academia and industry met to establish IT'IS in 1999, they were uncertain not only about whether a small organization could make a substantial impact in achieving a better understanding of how electromagnetic fields might affect human health, but also whether such a small organization could even survive. The concept of having an organization partly supported by the industry and governments closely connected to the issues that it sought to investigate was questioned. In the beginning, many were concerned that the Foundation might lack independence in conducting research studies or would not be able to adapt to new research demands and acquire sufficient funding. Fortunately, ten years of experience have demonstrated that these concerns were unwarranted. The sponsors who have supported IT'IS have done so with the promise that our studies would be conducted according to the most rigorous standards of research and integrity and that all results would be published so that any findings might become part of the public domain. We continue to leverage our core competencies through our distinctive capabilities to simulate electromagnetic, thermal, flow and acoustic problems in and outside the human body to meet the growing demand of a diverse market and government agencies.

One of our responsibilities as a foundation is to be perceptive to new and evolving opportunities and challenges. We seek to identify new areas where we can focus our resources and still make a difference while maintaining our core values. We endeavor not to be isolated or insulated as a foundation. We achieve this by communicating openly within our organization, with colleagues, collaborators, experts, and each other to assess whether our strategies remain relevant. We are grateful to all of the leading scientists with whom we have collaborated over the years to investigate a broad and expanding range of topics in biomedical, medical, engineering and physical sciences (Page 10).

The world of scientific research is full of unknowns, obstacles to overcome, techniques to be mastered, and surprising or puzzling interpretation of results. Yet, the possibility that our efforts will result in finding safe and beneficial applications of electromagnetics in health and information technologies is what drives our talented staff to pursue the world of unknowns. Their unrelenting dedication makes possible the past, current and future success of our mission. Our successes would also not have been possible without the unconditional support, encouragement and insightful counsel of Profs. Ralf Hütter, Wolfgang Fichtner and Quirino Balzano. In addition, the expertise and shared vision of ETH Presidents Olaf Kübler and Jakob Nüesch and Profs. Peter Niederer and Albert Kündig, proved to be fundamental to the establishment of the Foundation. We are grateful for the continuous support of our previous and current board members (Page 4) and all the sponsors (Page 9), in particular, CTI and SPEAG for their long-standing commitment to funding various projects and MMF whose sponsorship was essential to the development of the Foundation in the early years. We will continue to maximize the value of their ongoing collective support as we embark on the next decade.

As I invite you to browse through the highlights of some of our most important progress in this 10th Anniversary Annual Report, I hope you share with me a similar sense of excitement and pride in realizing the growth of our organization and the depth of our research and innovation over the past 10 years. Although we are proud of what the Foundation has accomplished, we are mindful of the complexity and continuous evolution of the issues we seek to address. At the same time, we look to the future, to the excitement of opportunity, and to a great exploration of ways to improve technology, enhance the quality of life, and add life years through the initiatives, priorities and goals that guide us in striving for ever-increasing quality in all that we do. We will build on our existing core competencies in electromagnetics and leverage our distinctive capabilities into adjacent research areas in medicine and computational life sciences. We are certain that the Foundation will continue to make a difference for good in the world for decades to come.

Zurich, June 2010

Prof. Niels Kuster

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President

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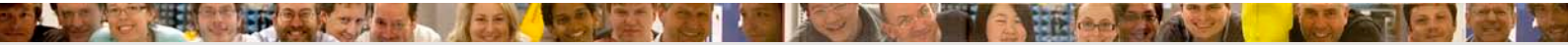
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Prof. Albert Kündig, emeritus ETH Zurich, Switzerland (1999 – 2007)

Prof. Masao Taki, Tokyo Metropolitan University, Japan (1999 – 2002)

Dr. Christer Törnevik, Ericsson, Sweden (1999 – 2005)

OUR TEAM



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Andreas Christ, PhD, Project Leader
Mark Douglas, PhD, Project Leader
Jari Jekkonen, PhD, Project Leader
Sven Kühn, PhD, Project Leader
Esra Neufeld, PhD, Project Leader
Michael Oberle, PhD, Project Leader
Dominik Szczerba, PhD, Project Leader
Iris Szankowski, PhD, Scientific Coordinator

Kathrin Burckhardt, PhD, Postdoc
Eugenia Cabot, PhD, Postdoc
Guillermo del Castillo, PhD, Postdoc
Tomasz Stefanski, PhD, Postdoc

Vick Chen, PhD Student
Matthias Christen, PhD Student
Yijian Gong, PhD Student

Adamos Kyriacou, PhD Student
Chung-Huan Li, PhD Student
Manuel Murbach, PhD Student
Jagadish Nadakuduti, PhD Student

Barbara Bühlmann, Scientific Assistant
Roxana Djafarzadeh, Scientific Assistant
Marie-Christine Gosselin, Scientific Assistant
Roger Jacot, Scientific Assistant
Marcin Pastewski, Scientific Assistant
Salome Ryf, Scientific Assistant
Marcel Zefferer, Scientific Assistant

Anja Burse, Photography, Graphics & Design
Martin Dällenbach, Personal Assistant to the Director
Jane Fotheringham, Text Editor
Jonathan Gubler, Graphics & Support
Jacqueline C. Pieper, Finance & Administration
Daniel Walser, Graphics, Movies & Design

Luigi Ganzerla, MSc Student

External Advisors

Prof. Quirino Balzano, University of Maryland, USA
Charlie Götschi and Markus Müller, Untersee Composites, Switzerland
Dr. Georg Klaus, maxwave AG, Switzerland
Albert Lenherr, Mechanical Engineering Consultant, Switzerland
Prof. Theodoros Samaras, Aristotle University of Thessaloniki, Greece
Dr. Balint Szentkuti, EMC & RF Consultant, Switzerland
Dr. Roger Yew-Siow Tay, Motorola, Singapore

Former Employees and External Advisors

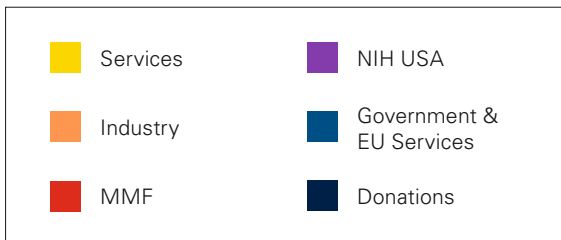
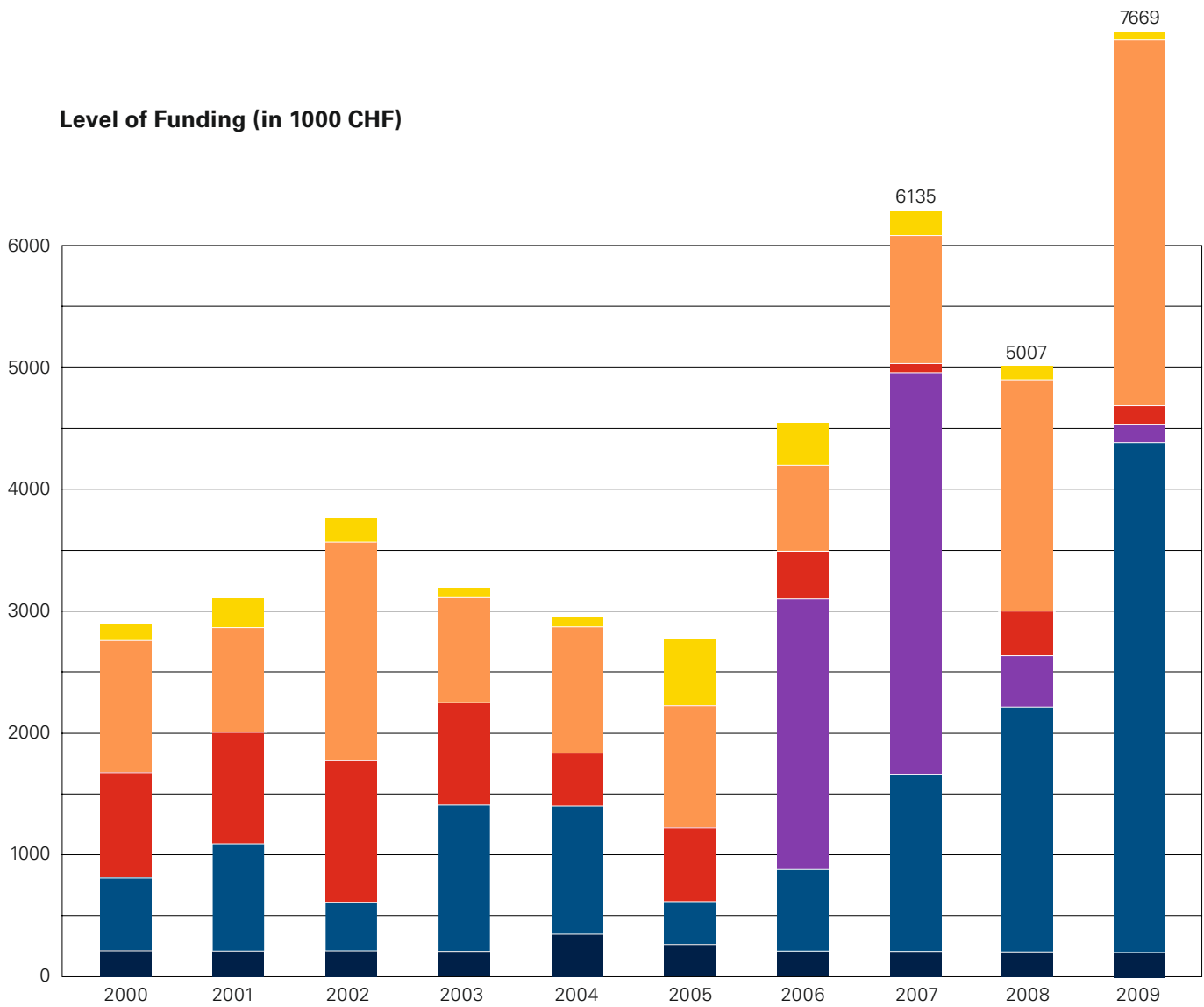
Ross W. Adey, Michael Ammann, Stefan Benkler, Veronica Berdiñas-Torres, Malika Bouterfas, Clémentine Boutry-Viellard, Michael Burkhardt, Emilio Cherubini, Maria Christopoulou, Benedict da Silva, Valérie Dobler, Sven Ebert, Oliver Egger, Nicole Emmenegger, Sang Jin Eom, Francesca Dalia Faraci, José Fayos-Fernández, Jürg Fröhlich, Peter Fütter, Regula Gehrig, Joachim Goecke, Christian Goiceanu, Jean-Claude Gröbli, Mona Hammad, Katharina Honegger, Wolfgang Kainz, Ralph Kästle, Valentin Keller, Sinan Köksoy, Georg Klaus, Anja Klungenböck, Axel Kramer, Amit Kumar, Marco Lichtsteiner, Martin Loeser, Urs Lott, Klaus Meier, Rainer Mertens, Peter Müller, Neviana Nikoloski, Walter Oesch, Joanna Olszewska, Andrea Ott, David Perels, Sergey Perov, Katja Pokovic, Albert Romann, Darko Saik, Theodoros Samaras, Stefan Schild, Thomas Schmid, Frank Schönborn, Jürgen Schuderer, Eva Schumacher, Thomas Schwitter, Christos Serletis, Denis Spät, Glen Stark, Philipp Storchenegger, Magnus Sundberg, Roger Yew-Siow Tay, David Trudel, Markus Tuor, Ondrej Voles, Michelle von Issendorff-Stubbs, Martin Wälti, Miriam Wanner, Marc Wegmüller, Aleksandra Winiarski, Chenghao Yuan, Oliver Zehnder, Gu Zong

GUESTS

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Dr. Louai Al-Dayeh, Boston Scientific Corporation, USA
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Gert Andersen, Antia Therapeutics SA, Switzerland
Luca Balbi, Esaote, Italy
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Dr. James Bentsen, Boston Scientific Corporation, USA
Norbert Bischof, Siemens, Germany
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Peter Boileau, St. Jude Medical, USA
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Greg Carpenter, Boston Scientific Corporation, USA
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Mustafa Centintas, UME, Turkey
Dr. Philip Chadwick, EMFields Ltd, UK
Prof. Indira Chatterjee, University of Nevada-Reno, USA
Dr. Ewa Czerska, FDA, USA
Warren Dabney, Greatbatch, Inc., USA
Dominique Decoene, Sorin, France
Dr. Michel Decré, Philips Research, Netherlands
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Dr. Georg Klaus, Maxwave, Switzerland
Dr. Thomas Kleine-Ostmann, Physik.-Techn. Bundesanstalt, Germany
Prof. Dariusz Leszczynski, STUK, Finland
Dr. Jan Lienemann, IMTEK, Germany
Prof. James Lin, University of Illinois at Chicago, USA
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Martin Meier, Federal Office of Public Health, Switzerland
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Dr. Lukasz Miroslaw, Vratis, Poland
Dr. Antonio Motta, Telprom, Italy
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Dr. Michael Murphy, AFRL/HED, USA
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Yves Oesch, Phonak Communications AG, Switzerland
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Hartmut Ritscher, TÜV SÜD, Germany
Glen Sabin, GE Healthcare, USA
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Dr. Thorsten Schrader, Physik.-Techn. Bundesanstalt, Germany
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Thierry Scordilis, Sorin CRM - ASIC, France
Marc Secall, Phonak Communications AG, Switzerland
Dr. Frank Seifert, Physik.-Techn. Bundesanstalt, Germany
Dr. Gal Shafirstein, University of Arkansas for Medical Sciences, USA
Nicolas Shan, Sorin, France
Joe Spaulding, Greatbatch, Inc., USA
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Onno Strenge, Biotronik, Switzerland
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Dr. Ross Venook, Boston Scientific Corporation, USA
Dr. Vijayalaxmi, University of Texas HSC, USA
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Josef Vock, St. Jude Medical, USA
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Dr. Terry Woods, FDA, USA
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Dr. Yi Xie, China Academy of Telecommunication Research, China
Dr. Volkert Zeijlemaker, Medtronic, USA
Dongsheng Zhao, NMI-VSL, Netherlands
Dr. Martin Zimmerling, MEDEL, Austria

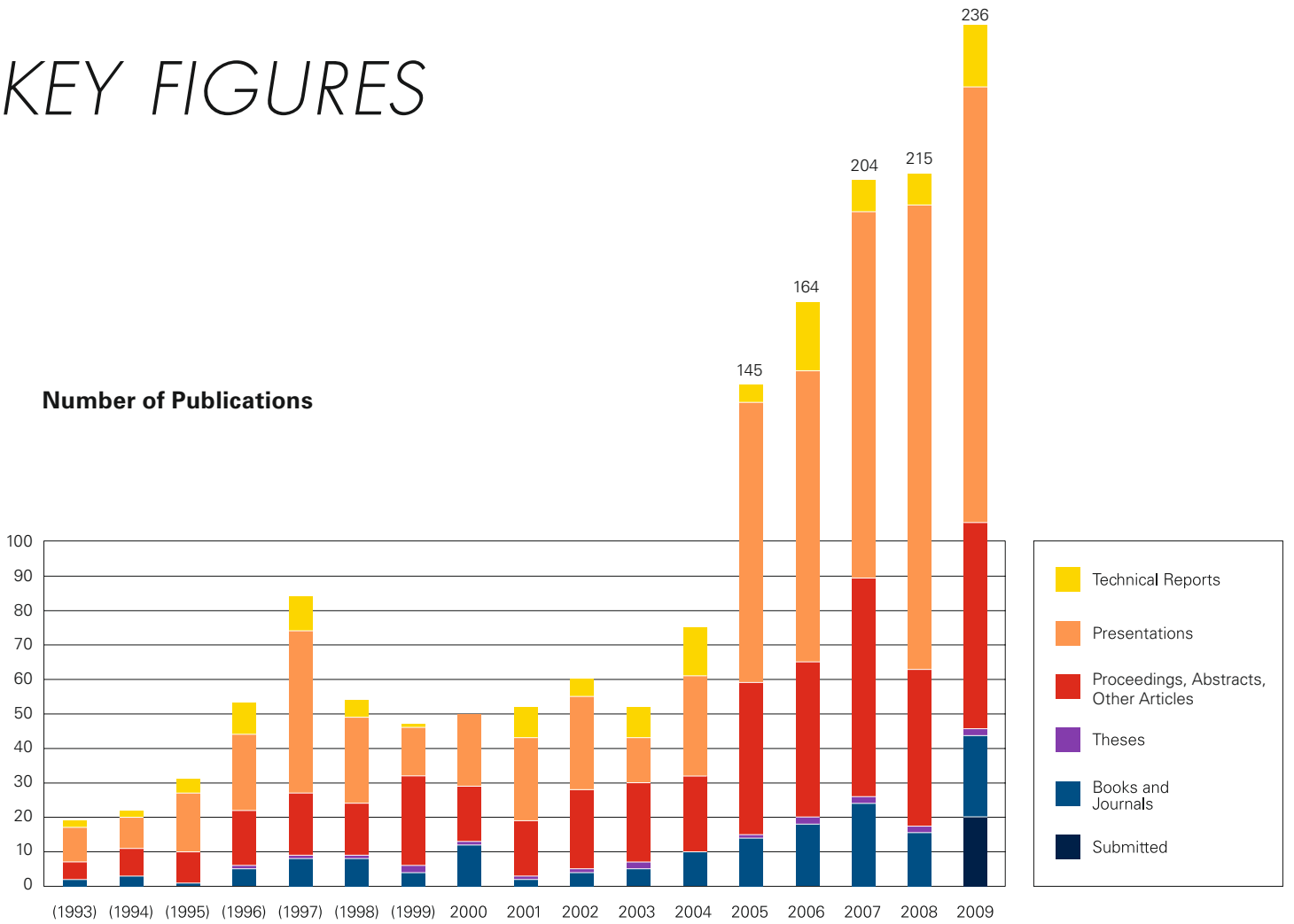
KEY FIGURES

Level of Funding (in 1000 CHF)

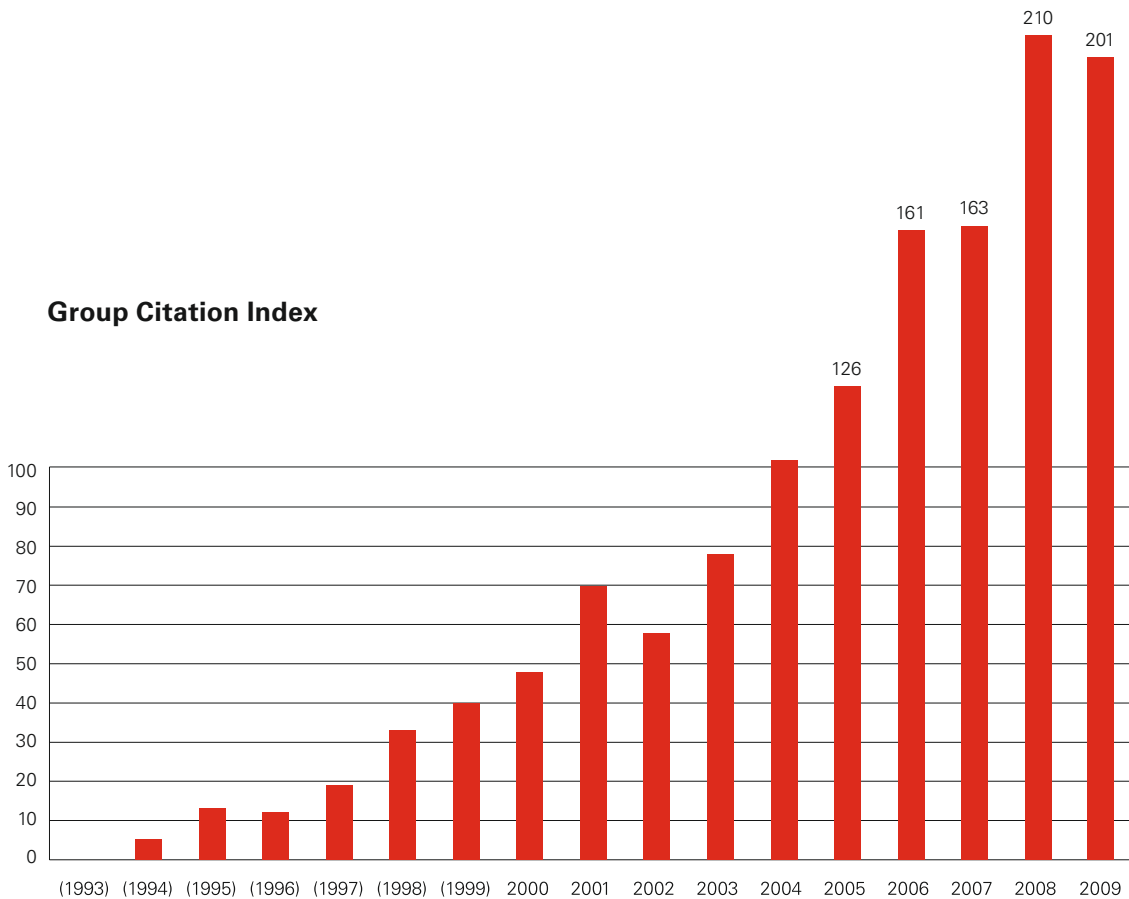


KEY FIGURES

Number of Publications



Group Citation Index



(year) represents development at ETH before establishment as an independent foundation

SPONSORS

Government Agencies

Centre for Technology Assessment (TA-SWISS), Switzerland
Innovation Promotion Agency (CTI), Switzerland
EUREKA, Switzerland
Dept. of Employment, Social Affairs and Equal Opportunities, EU
Federal Office for Education and Science (FOES), Switzerland
Federal Office for the Environment (FOEN), Switzerland
Federal Office of Communications (OFCOM), Switzerland
Federal Office of Energy (SFOE), Switzerland
Federal Office of Public Health (FOPH), Switzerland
Fifth Framework Programme of the European Union, Belgium
Federal Institute for Occupational Safety and Health (BAuA), Germany
Federal Office for Radiation Protection (BfS), Germany
National Institute of Environmental Health Sciences (NIEHS), USA
National Institute of Standards and Technology (NIST), USA
Swiss National Science Foundation, Switzerland
Seventh Framework Programme of the European Union, Belgium
Sixth Framework Programme of the European Union, Belgium
ZonMw, Netherlands

Non-Profit Organizations

Foundation for Behaviour and Environment (VERUM), Germany
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CTIA, USA
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International Business Machines Corp. (IBM), USA
Kaba, Switzerland
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MED-EL, Austria
Mitsubishi Electric, Japan
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Panasonic, Japan
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Vodafone, UK

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Antia Therapeutics AG, Switzerland
Felsenmeer AG, Switzerland
maxwave AG, Switzerland
Schmid & Partner Engineering AG, Switzerland
Sensimed AG, Switzerland
ZMT Zurich MedTech AG, Switzerland

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Universities and Other Research Institutions

Computer Vision Lab, ETHZ, Switzerland
Automatic Control Laboratory, ETHZ, Switzerland
Institute of Biomedical Engineering, ETHZ, Switzerland
Institute of Geophysics, ETHZ, Switzerland
Institute of Food Science and Nutrition, ETHZ, Switzerland
Institute of Robotics, ETHZ, Switzerland
Integrated Systems Laboratory, ETHZ, Switzerland
Laboratory of Thermodynamics, ETHZ, Switzerland
Biomedical Optics Research Laboratory, UZH Zurich, Switzerland
Institute for Pharmacology & Toxicology, UZH, Switzerland
University Children's Hospital Zurich, Switzerland
Neurology Clinic, UZH, Switzerland
Neuroscience Center Zurich, Switzerland
University Hospital Zurich, Switzerland
Geneva University Hospital, Switzerland
Aarau Cantonal Hospital, Switzerland
Hospital of La-Chaux-de-Fonds, Switzerland
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Powder Technology Lab, EPFL, Switzerland
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Institute for Social & Preventive Medicine, UNIBE, Switzerland
Clinical Research and Veterinary Public Health, UNIBE, Switzerland
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Laboratory of Biomechanics, UNIBAS, Switzerland
Orthopedic Section, Basel University Hospital, Switzerland
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Tissue Dynamics Lab, Paracelsus Private Medical University, Austria
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Toronto University, Canada
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Helsinki University of Technology, Finland
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PIOM Laboratory, University of Bordeaux, France
IMS, University of Bordeaux, France
Supélec, Ecole Supérieur d'Electricité, France
ULP, University Louis Pasteur, France
Center of Radiation Medicine, TU Berlin, Germany
Clinic for Radiation Oncology, Charité UH Berlin, Germany
GSF, National Research Center for Environment and Health, Germany
IFB, Institute of Biophysics Leibniz University Hannover, Germany
IMST, Institute for Mobile and Satellite Technology, Germany
IMTEK, University of Freiburg, Germany
Leibniz Institute of Plant Genetics and Crop Plant Research, Germany
Friedrich Schiller University of Jena, Germany
Max Planck Institute for Human Cognitive & Brain Sciences, Germany
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IFA, Institute of Applied Physics, Spain
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Imperial College, UK
Keele University, UK
Beatson Institute for Cancer Research, Glasgow, UK
Arkansas Children's Hospital, USA
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The University of Houston, USA
Indian Institute of Technology Kanpur, India
Hokkaido University, Japan
Metropolitan University of Tokyo, Japan
University of Tokyo, Japan
University of Zhejiang, China
King Saud University, Saudi Arabia

Public Offices and Agencies

China Academy of Telecommunication Research (CATR), China
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Electronics and Telecom. Research Institute (ETRI), South Korea
Federal Communications Commission (FCC), USA
Federal Office for Radiation Protection (BfS), Germany
Federal Office for the Environment (FOEN), Switzerland
Federal Office of Communications (OFCOM), Switzerland
Federal Office of Energy (SFOE), Switzerland
Federal Office of Public Health (FOPH), Switzerland
Food and Drug Administration (FDA), USA
Health Protection Agency (HPA), UK
Ministry of Information Industry (MII), China
National Inst. of Information & Communications Techn. (NICT), Japan
National Institute of Environmental Health Sciences (NIEHS), USA
National Institute of Standards and Technology (NIST), USA
Radio Research Laboratory (RRL), South Korea
Russian Academy of Medical Science (RAMS), Russia
South African Bureau of Standards (SABS), South Africa
State Radio Monitoring Center (SRMC), China
State Secretariat for Economic Affairs (SECO), Switzerland
Telecommunication Metrology Center (TMC), China
World Health Organization (WHO), Switzerland

Private Industry

AF Industri & System, Sweden
AGC Automotive, USA
Alnair, Japan
Antia Therapeutics, Switzerland
ARIB, Japan
AT&T, USA
Boston Scientific Corporation, USA
Cetelco, Denmark
Dialogik GmbH, Germany
EMSS, Stellenbosch, South Africa
Ericsson Radio Systems AB, Sweden
Exponent Inc., USA
France Telecom, France
Fraunhofer ITEM, Germany
Hirslanden Private Hospital Zurich, Switzerland
Huber + Suhner AG, Switzerland
IBM, Switzerland
IGT (Image Guided Therapy), France
Imricor Medical Systems, USA
Incos Boté Cosmetic GmbH, Mainz, Germany
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maxwave AG, Switzerland
MCL Technology Limited, UK
Mitsubishi, Japan
Motorola, USA & Singapore
Nokia Research Center, Finland
NTT & NTT DoCoMo, Japan
Perlos, Sweden
Pfisterer International, AG, Switzerland
Philips Medical Systems, Netherlands
Phonak Communications AG, Switzerland
Qualcomm, USA
RBM, Italy
RCC, Switzerland
Sagem, France
Schmid & Partner Engineering AG, Switzerland
Siemens Medical Solutions AG, Germany
STUK Finnish Center for Radiation and Nuclear Safety, Finland
Sunrise Communications AG, Switzerland
Swisscom, Switzerland
Synopsis Inc., USA
T-Mobil, Germany
TILAB, Italy
Vodafone, UK
Vratis, Poland
ZMT Zurich MedTech AG, Switzerland

LESSONS FROM THE PAST, PROMISE FOR THE FUTURE

Reflecting on the past is an indulgence granted to those who have reached a distinguished level of achievement. On the 10th anniversary of our founding, the IT'IS Foundation eagerly exercises this privilege of reflection. Such reminiscence allows us to trace our evolution, helping us to understand what we are today. We document our history not only out of pride in our accomplishments, but to help guide us in the increasingly complex task of adapting and responding to the changes around us in a way that preserves our core values, while enhancing and furthering our mission.

For the last ten years, the Foundation's research activities have reflected its vision of improving and advancing the quality of people's lives through the safe and beneficial applications of electromagnetic energy in health and information technologies. From our first project, we consistently tried to maintain an independent, proactive, and innovative research institute through sound science and education. We seek and develop innovative solutions through interconnected initiatives. Each initiative

addresses several of our focus areas from engineering to medicine. Each commits to specific measurable goals within attainable time frames. Our depth of expertise and experience allows us to seize a myriad of opportunities and adjust our approaches accordingly. In all our efforts, the Foundation aims to make a tangible difference in people's lives.

It requires a special commitment and vision to persevere in the search for conclusive answers and effective solutions. It demands a willingness to take risk, to tolerate failure, and to accept uncertainty. We continually strive to create leverage with our experience, expertise and dedication, confident that our efforts will continue to yield gratifying results. With the perspective of time, we have found that while areas of support have shifted, policies have changed, technology has become more complex and competition has grown, our fundamental principles have remained the same.

This is our story.

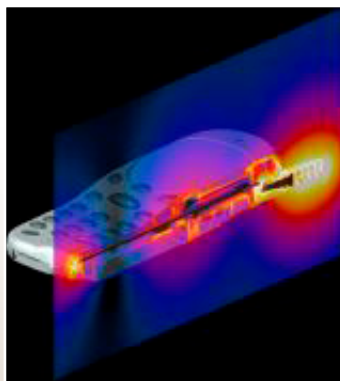
THE FORMATIVE YEARS

The IT'IS Foundation was founded as a non-profit, independent research institute on November 22, 1999 through the initiative and support of the Swiss Federal Institute of Technology in Zurich (ETHZ), the global wireless communications industry and several government agencies with the aim of creating a flexible and dynamic research institution capable of addressing the research needs of society in the explosively expanding field of information technologies. In thoughtfully planning the strategies that would allow for the Foundation's future accomplishments, a plan was implemented to maximize its impact by combining people and talent and to address the needs of the field of bioelectromagnetics. Selecting both a diverse group of board members from academia, industry and government and outstanding distinguished and young scientists was critical to ensure a high quality of research, to build global alliances with the research community, and to secure sufficient funding. It was also essential to establish a clear separation between the sources of funding and the results of individual research projects, crucial to both the credibility and the longevity

of the Foundation. IT'IS also endeavored to provide a proactive, creative and innovative research environment for the cultivation of sound science & research and good education.

Essential to the vitality of information exchange and innovation among scientists, an active program of participating in scientific conferences has been in place since our early years. Successful conference activities have included numerous keynote and plenary presentations at international conferences ranging from engineering to medicine. The Foundation also convened and organized conferences and workshops, such as Monte Verità 2006 and BioEM 2009, to explore and discuss important topics in bioelectromagnetics. As it grew, the Foundation became more committed to communicating information through peer-reviewed journals, conference proceedings, television interviews, and white papers. The Foundation also hosts a website which shares information about its mission, research projects, publications, and annual reports.

IT'IS FOUNDATION



2000



On November 22, 1999, the IT'IS Foundation was officially established.

*Major Breakthrough in Simulation
First ever successful analysis of a mobile phone by EM simulation without simplifications*

*REFLEX Project
Introduced a new standard for well-controlled and blinded EM exposure of cells. Hundreds of experiments were subsequently conducted worldwide using derivatives of these setups.*

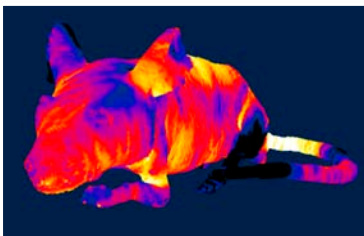
*PERFORM Project
Developed cost-effective in vivo exposure setups without compromising exposure quality.*

REALIZING THE VISION

Success is defined in many ways: the number of projects initiated each year, the number of scientific publications, the number of novel and effective solutions developed, the number of new or young scientists given the opportunity to pursue a research career, the number of awards and accolades. By 2005, IT'IS had become an emerging competence center in the field of bioelectromagnetics. The Foundation prides itself on being at the forefront of important trends and revelations that have shaped bioelectromagnetic research today. Our interdisciplinary approaches have allowed us to seamlessly expand our research endeavors to meet shifting research interests and to explore exciting new applications of electromagnetic fields (EMF).

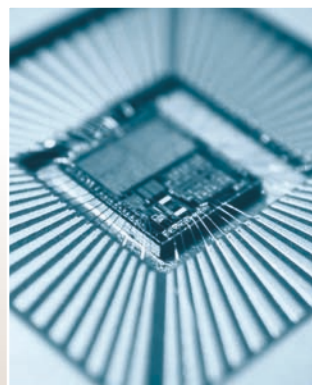
Although concern about EMF exposure on human health originated decades ago, the advent of mobile phones ignited new interest among the public, industry and government to identify potential adverse effects. The limited financial and human resources and infrastructure of the Foundation in the early years dictated that the research direction must be sharply focused and highly selective. For the first four years, we maintained focus in two

critical areas: 1) Health Risk Assessments and 2) Measurement and Computational Techniques for Electromagnetic Analysis. Emphasis was initially placed on developing sound exposure systems to investigate the effects of EMF exposure on human health in large collaborative studies, such as the EU FP5 PERFORM A and REFLEX as well as the industry-funded PERFORM B and C projects. A prior collaboration with the Sleep Laboratory of the University of Zurich on changes in sleep EEG after radiofrequency (RF) exposure also continued at the newly opened Foundation and yielded unexpected, interesting, yet puzzling results. The REFLEX project also revealed unanticipated positive results, namely the effects of extremely low frequency (ELF) and RF exposures on gene expression stability. The Foundation actively initiated confirmation studies on the positive ELF findings of the University of Basel. After garnering initial positive results, these ELF confirmation studies became part of the Swiss National Research Program NRP57. SEAWIND, an EU-funded project of the 7th Framework Programme commenced in December 2009 under the leadership of the IT'IS Foundation and will now focus on the positive RF findings.

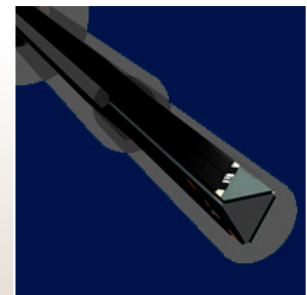


2001

PERFORM Project
Introduced the concept of tissue specific dosimetry that became today's standard.



CTI ULTRACOM Project
Evaluation of the effectiveness of the human body as a communication medium to control/monitor implanted and body-mounted sensors and activators.



2002

EUREKA SARYS Project
After introducing the world's smallest single-axis probe and novel pseudo-vector probes, IT'IS & SPEAG developed the smallest isotropic probe, enhancing the standards for dosimetric evaluations.

BUILDING ON OUR SUCCESSSES

Our growing expertise and proven competence was further recognized when the prestigious US National Institutes of Health (NIH) selected the IT'IS Foundation to develop the world's largest facility for RF animal exposures as part of a US\$ 25 million long-term study to evaluate the potential toxicity and carcinogenicity of cell phone RF signals in laboratory animals. Similarly, the Swiss National Science Foundation appointed IT'IS to develop most of the exposure systems and conduct the required exposure assessments for the NRP57 program.

The first years of the Foundation also saw the evolution of the pioneering state-of-the-art EM and thermal simulation software SEMCAD X, partly funded by projects such as TRINITY. In parallel, we began developing the next generation of measurement instrumentation capable of full time-domain analysis. Research on developing rigorous and scientifically sound procedures to demonstrate compliance (Project CSCIENCE) and active participation in standardization committees of CENELEC, IEEE SCC34, SCC28 and IEC106 were also main concerns of the Foundation from the beginning.

IT'IS eventually collaborated with the US Food & Drug Administration (FDA) to resolve the long-standing controversy generated by the proposition that children absorb greater amounts of energy from mobile phones than adults. The results of these studies that were funded by government agencies, the Mobile Manufacturers Forum (MMF) and test equipment manufacturers helped to establish undisputed, scientifically sound, long-term stable and harmonized standards for wireless devices.

By 2003 our momentum was evident as we launched a new research area, Health Support Systems, to complement our two well-established research areas. As the trend towards incorporating miniaturized wireless sensors in medical and health surveillance systems increased, the Foundation capitalized on its core strengths in engineering, computational and physical sciences. Our initial project, ULTRACOM, aimed at developing a comprehensive model for data transmission through the human body. Ambitious new projects soon followed, including HYCUNEHT, a hyperthermia treatment project to

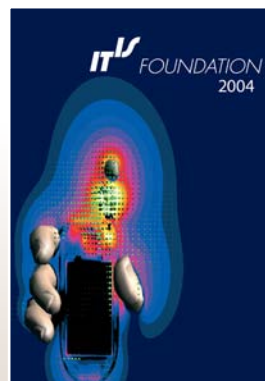


2003

CSCIENCE Project
Major gaps were closed for defining scientifically sound methodologies and procedures for compliance testing of mobile phones operated at the ear.

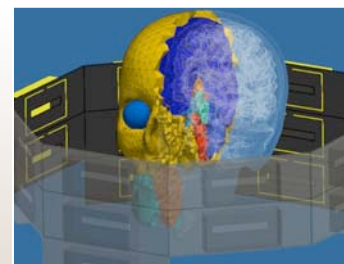


CTI TDS Project
Development of the blueprint for active, electrically isolated miniaturized sensors with spatial resolutions of $<0.5\text{mm}$ - the next generation of near-field measurement technology.



2004

CTI TRINITY Project
Enhancement of our EM simulation platform to perform automated multi-goal optimizations of mobile phones.



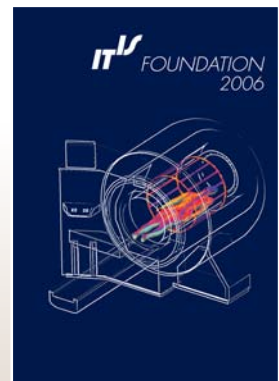
CTI HYCUNEHT Project
Novel applicator and treatment planning tools were developed and applied in Phase II clinical trials for head and neck cancers.

develop novel and sophisticated clinical tools, such as novel antenna array treatment planning software and image processing algorithms, for the treatment of cancerous tumors. The developed tools demonstrated proof of concept and are currently being applied in Phase II clinical trials for head and neck cancers. Although this new research area was off to a strong start, industry and government began to drastically cut funding for health risk assessments by mid-decade, jeopardizing vital projects.

The Foundation responded by using its own funds to expand its infrastructure and increase its human resources while reaching out to new partners and applying for new grants. In time, our relentless efforts were rewarded as new opportunities emerged in various research areas. Stronger research ties were established with the FDA through a mutual Cooperative Research and Development Agreement (CRADA), initiating the evolution of our 3D anatomically correct Virtual Family models. In subsequent projects, the original Virtual Family was extended to include the Virtual Classroom and an entire patient

population. These freely available models are widely used by hundreds of research groups around the world for non-commercial projects.

We also established strong ties with many prominent research laboratories in pursuit of medical technology advances and with partners at universities, start-up companies and global corporations. Continued progress in our measurement and simulation technologies stimulated our growing activities in promoting increased safety for magnetic resonance (MR) imaging, MR-safe implants and MR-guided intervention. In cooperation with one of the world's largest manufacturers of active medical implants, IT'IS began developing rigorous and sound procedures for demonstrating compliance of active and passive medical implants with safety limits for human exposure and temperature increases within an MR environment. Our successes in medical technology research ultimately led to the formation of ZMT – Zurich MedTech, an IT'IS Foundation spin-off, in 2006.



2005

2006

*CTI COLHA Project
Development of novel concepts and instrumentation for wireless links of medical on-body and implanted devices.*

*NIEHS Project
Feasibility evaluation, prototyping, manufacturing, installation at ITRII, servicing and monitoring of the world's largest RF exposure facility (21 reverberation chambers) for the \$25M NTP study on the potential toxicity and carcinogenicity of cell phone RF radiation.*

*Various MR Projects
Analyses of the safety of medical implants in MR environments, and the development of testing methodologies, equipment and procedures. Projects on MR safety evaluations, e.g., EUREKA MRI+ and EU Commission Mandate.*

THE JOURNEY OF DISCOVERY CONTINUES

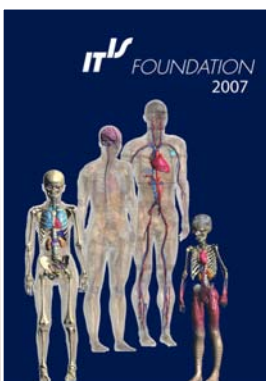
In recent years, the Foundation broadened its research focus by establishing a new research group, Computational Life Sciences, with the ambitious goal of becoming a major contributor in multiphysics and tissue modeling for applications such as the evaluation and development of novel diagnostic and therapeutic modalities. A series of finite element method-based solvers for flow, mechanics and convection-diffusion-reactions have already been developed. Recently approved funding will allow the further development of advanced acoustic solvers focusing on ultrasound and EM-neuron interactions. An important milestone will be the effective integration of these solvers and tissue modeling into a coupling framework.

Compared to commercially available solvers, our current specialized solvers are approximately 100 times faster. Complementary software was also developed to simulate realistic biological tissue distributions by generating high quality meshes based on segmented image data. The simulation tools are now being applied to problems as diverse as tumor growth and treatment modeling, cartilage remodeling, bone resection, stent deployment, flow conditions in aneurysms and aneurysm

formation, hemo-magneto-dynamic effect, intussusceptive angiogenesis and swimming microrobots.

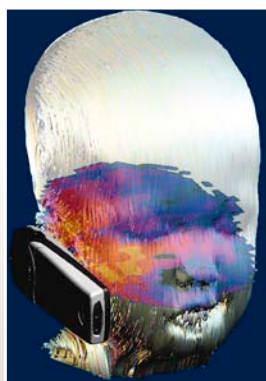
We will simultaneously pursue our research in EM cancer treatment to improve and extend our advanced hyperthermia applicator and treatment planning technologies with the collaborative support of our current and new partner network. In silico models generated with our simulation tool will also enhance our understanding of cancer at a cellular and systematic level in the years to come.

By harnessing the power of our advances and expertise in electromagnetic energy delivery systems and EMF modeling, the Foundation can explore new scientific frontiers at the interface of computation, biology, physics and engineering. These new research initiatives have allowed the Foundation to improve its research productivity and accelerate the discovery process through the continued development of our core competencies in experimental and computational electromagnetics and the continued expansion of our expertise in biology and medical technology.



2007

*MMF VF Project
Evolution of our jointly developed (IT'IS/FDA)
3D anatomically correct models, representing
the entire human population from children
to obese adults. 100s of groups around the
world currently use these freely available
models for non-commercial projects.*



*ZonMw, BfS, NRP57 Projects
Assessments of the EMF exposures of
unborn fetuses and children to various
exposure scenarios, including mobile
phones and induction heating.*

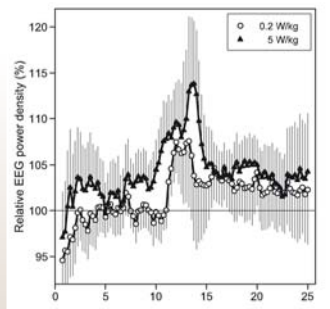


2008

*NRP57 Projects
Development of live-imaging exposure
system to investigate the mechanisms
responsible for the reproducible adverse
effects of EMF exposure on gene
expression stability.*

The Foundation has been privileged to be served well by talented scientists from academia, industry and government who, through their dedication, wisdom, and counsel have guided the Foundation for a decade. We strive to attract and retain the finest talent by promoting a supportive and stimulating environment where there are no barriers to creativity and excellence. The Foundation has also built effective partnerships with the research community since we duly recognize that the future of science and technology will unfold at the intersection of disciplines. The sustained vision and generosity of our many donors, sponsors and contributors are gratefully acknowledged, as their support allows the Foundation to further contribute to evolution of knowledge in the field of bioelectromagnetics.

There were no guarantees that the Foundation's efforts would have an impact. Seemingly insurmountable obstacles have been overcome and we have survived the test of time. We welcomed the associated obligations and responsibilities to continually conduct good science as we are committed to maintaining our status as the leading competence center in near-field instrumentation, computational electromagnetics and bioelectromagnetic research and to expanding our expertise in computational life sciences for the development of novel diagnostic and therapeutic modalities. Collectively, our research initiatives represent our commitment to advancing our mission of making a tangible difference in people's lives by enhancing the safety and quality of emerging electromagnetic technologies, improving the quality of life and adding healthy life years. Our challenge in the coming years is to build on the exceptional achievements of the last decade while staying true to our enduring mission. Our accomplishments must serve as our inspiration for all the work that is yet to be done.



2009

CTI MRI+ Project
Development of poseable models that mimic the natural movements of a human body without changing tissue volumes or altering tissue structures, such as vessels and skin.

Projects Funded by IT'IS, RFM, NRP57
Reproducible evidence of sleep spindle EEG changes after low-level, pre-sleep EMF exposure.

FDA MHD Project
First application of our multiphysics platform to investigate the validity of Hemo-Magneto-Dynamics as a marker for vascular diseases.

INFRASTRUCTURE

Dosimetric, Near-Field and EMC/EMI Facilities

Semi-Anechoic Chamber

This shielded, rectangular chamber has the dimensions 7 x 5 x 2.9 m (L x W x H). It is equipped with a reflecting ground plane floor, and half of its walls are covered with electromagnetic absorbers. The chamber contains an integrated DASY5NEO system and can be utilized for all research activities involving dosimetric, near-field and far-field evaluations, the optimization and synthesis of handheld devices, body-mounted transmitters, implants, desktop applications, micro-base and pico-base station antennas, exposure setups, calibration procedures, EMI tests, MRI safety tests, compliance testing of implants, etc.

Two Reverberation Chambers

The Blue and NIEHS Reverberation Chambers have the dimensions 4 x 3 x 2.9 m and 3.7 x 2.2 x 2.7 m (L x W x H), respectively. Both chambers are equipped with two mechanical stirrers and provide controlled and consistent environments for EM emissions and immunity testing, as well as shielding effectiveness and susceptibility testing of electromagnetic equipment.

Facility for Dosimetric Compliance Testing

IT'IS shares a facility with Schmid & Partner Engineering AG, which meets the requirements for dosimetric evaluations. Class C accreditation is expected in 2010 through METAS for all types of dosimetric evaluations.

Technical Equipment and Instrumentation

Spectrum and Network Analyzers

1 Rohde & Schwarz ZVA24 Vector Network Analyzer, 10 MHz – 24 GHz
1 Rohde & Schwarz FSP Spectrum Analyzer, 9 kHz – 30 GHz
1 HP 8753E Network Analyzer, 30 kHz – 6 GHz
1 HP APC 85033B Calibration Kit
1 Rohde & Schwarz ZV-Z52 Calibration Kit

Signal Generators and Testers

1 Agilent E8251A Signal Generator, 250 KHz – 20 GHz
1 Rohde & Schwarz SMU200A, Signal Generator
1 Rohde & Schwarz SMT06, Signal Generator
1 Rohde & Schwarz SMIQ02B, Signal Generator
1 Rohde & Schwarz SML03, Signal Generator
2 Rohde & Schwarz SML02, Signal Generators
1 Rohde & Schwarz SMY02, Signal Generator
1 HP 8647A, Signal Generator 250 KHz – 1000 MHz
1 Agilent 33250A, Waveform Generator
3 Agilent 33120A, Waveform Generators
1 Rohde & Schwarz CTS55, Digital Radio Tester
1 Rohde & Schwarz CMU200
2 Anritsu 3700A

DASY, iSAR, EASY4MRI, MITS

1 SPEAG DASY5NEO
1 SPEAG iSAR² Flat & Head
1 MITS1.5 w/Phantoms
1 MITS 3.0 w/Phantoms
1 MITS Gradient
1 INDY (3 year child head) Phantom
1 ISABELLA (6 year child head) Phantom
1 SPEAG SAM V6.0 Phantom
2 SPEAG ELI4 Phantoms
3 SPEAG ASTM Phantom
1 SPEAG HAC Extension

2 SPEAG EASY4/MRI
4 SPEAG DAEasy4MRI, Data Acquisition Electronics
2 SPEAG DAE4, Data Acquisition Electronics
1 SPEAG TSIL, Temperature Probe
8 SPEAG T1V3LA, Temperature Probes
2 SPEAG H3DV6, H-Field Probes
2 SPEAG H3DV7, H-Field Probes
1 SPEAG EX3DV3, Dosimetric Probe
2 SPEAG EE3DV1, E-Field Probes
2 SPEAG ER3DV6, E-Field Probes
1 SPEAG EF3DV6, E-Field Probe
3 SPEAG ET3DV6, Dosimetric Probes
1 SPEAG ET1DV1, Dosimetric Probe
2 SPEAG ET1DV2, Dosimetric Probes
1 SPEAG HTDS7V1, H-field Time Domain Sensor
Tissue Simulating Liquids 27 MHz – 6 GHz

Meters

1 Rohde & Schwarz NRP, 2 NRP Z-91 Power Meter
2 Agilent E4419B, 4 HP 8482A, Power Meters
3 HP 436A, 3 HP 8481A, Power Meters
3 Agilent 34970A Data Acquisition Units
1 Handyscope HS3 Data Acquisition Unit
1 Handyscope HS4 Data Acquisition Unit
1 Magnet Physik FH49 – 7030, Gauss/Teslameter

Amplifiers

1 LS Elektronik 2450 Amplifier, 400 W / 900 MHz
3 LS Elektronik 2449 Amplifiers, 200 W / 900 MHz
2 LS Elektronik 2448 Amplifiers, 60 W / 900 MHz
3 LS Elektronik 2452 Amplifiers, 200 W / 1800 MHz
1 LS Elektronik 2451 Amplifier, 60 W / 1800 MHz
1 LS Elektronik 2447 Amplifier, 5 W / 1800 MHz
2 LS Elektronik 2780 Amplifiers, 40 W / 2140 MHz
1 Amplifier Research 10S1G4A, Amplifier 800 MHz – 4.2 GHz
1 Kalmus 717FC RF Power Controller 200 – 1000 MHz
1 Nucléudes ALP336 Amplifier 1.5 – 2.5 GHz
1 EG&G Princeton Applied Research Lock-In Amplifier
8 Mini-Circuits, Amplifiers, ZHL42, 700 – 4200 MHz

Other Equipment

1 Narda H2304/101 Exposure Level Tester 1 Hz – 400 KHz
8 Maury 1878B, 3-Step Tuners
1 Siemens, Universale Messleitung (0.5) 1 – 13 GHz
6 Validation Dipoles D835, D900, D1640, D1800, D2450, D5GHz
2 SPEAG Dipoles SCC34 Benchmark
various

Computers

27 MacOS X: 1 PowerMac G5, 1 Mac Mini, 17 MacBook Pro,
4 MacBook, 3 MacBook Air
55 MS Windows: MS Windows: 19 Dalco AMD Dual Opteron 2.61 GHz, 1 Dalco Dual-Core AMD Opteron 2.21 GHz, 1 Dell Dimension 8400 P4 3.4 GHz, 4 Dell Dimension 8300 P4 2.6-3 GHz, 3 Dell Dimension 8250 P4 1-3.4 GHz, 5 Dell Dimension 8200 P4 1-3 GHz, 1 Dell Dimension 5000 P4 3.2 GHz, 3 Dell OptiPlex GX110, 1 Compaq EVO, 1 HP v420MT P4 1.5 GHz, 2 IBM T61 2.5GHz, 1 IBM T60 2.16GHz, 1 IBM T43p 1.86 GHz, 1 IBM T42p PM 1.7 GHz, 1 IBM T40 1.5GHz, 1 Lenovo TP T500 duo 2.4GHz, 1 Dell Latitude D800 1.6 GHz, 1 Dell Latitude L400 750MHz, 1 Dell XPS T9500 2.6GHz, 6 no name custom built in-house PC's
7 LINUX: 3 AMD Dual Opteron aXware ClusterInABox (3 Dual-boot Windows XP 64 Professional), 1 Silverstone MiniCIB AMD Athlon 64 X2 Dual 2.41 GHz (Dual-boot Windows XP 64 Professional)

SELECTED PUBLICATIONS 2009

- Sven Kühn, "EMF Risk Assessment: Exposure Assessment and Compliance Testing in Complex Environments," PhD Thesis, Swiss Federal Institute of Technology, Thesis No. 18637, Zurich, 2009.
- Sven Ebert, "EMF Risk Assessment: Exposure Systems for Large-Scale Laboratory and Experimental Provocation Studies," PhD Thesis, Swiss Federal Institute of Technology, Thesis No. 18636, Zurich, 2009.
- Clairy Wiholm, Arne Lowden, Niels Kuster, Lena Hillert, Bengt B. Arnetz, Torbjörn Åkerstedt, and Scott D. Moffat, "Mobile phone exposure and spatial memory," in *Bioelectromagnetics*, Vol. 30, (1), pp. 59–65, January 2009.
- Bengt B. Arnetz, Clairy Wiholm, Niels Kuster, Lena Hillert, and Scott D. Moffat, "Exploring Exposure to Mobile Phone Electromagnetic Fields and Psychophysiological and Self-Rated Symptoms," *Psychosomatic Medicine*, Vol. 71, (1), p. 115, January 2009.
- Sven Kühn, Wayne Jennings, Andreas Christ and Niels Kuster, "Assessment of induced radio-frequency electromagnetic fields in various anatomical human body models," in *Physics in Medicine and Biology*, Vol. 54, (4), pp. 875–890, February 2009.
- Myles H. Capstick, Jari O. Jekkonen, Andrew C. Marvin, Ian D. Flintoft, and Linda Dawson, "A novel indirect method to determine the radiation impedance of a handheld antenna structure," in *IEEE Transactions on Instrumentation and Measurement*, Vol. 58, (3), pp. 578–585, March 2009.
- Alexandre Barbault, Frederico P. Costa, Brad Bottger, Reginald F. Munden, Fin Bomholt, Niels Kuster, and Boris Pasche, "Amplitude-modulated electromagnetic fields for the treatment of cancer: Discovery of tumor-specific frequencies and assessment of a novel therapeutic approach," in *Journal of Experimental & Clinical Cancer Research*, Vol. 28, (1), p. 51, April 2009.
- Christina Ziemann, Heidrun Brockmeyer, Siddharth B. Reddy, Vijayalaxmi, Thomas J. Prihoda, Niels Kuster, Thomas Tillmann and Clemens Dasenbrock, "Absence of genotoxic potential of 902 MHz (GSM) and 1747 MHz (DCS) wireless communication signals: In vivo two-year bioassay in B6C3F1 mice," in *International Journal of Radiation Biology*, Vol. 85, (5), pp. 454–464, May 2009.
- Marie-Christine Gosselin, Andreas Christ, Sven Kühn, and Niels Kuster, "Dependence of the occupational exposure to mobile phone base stations on the properties of the antenna and the human body," in *IEEE Transactions on Electromagnetic Compatibility*, Vol. 51, (2), pp. 227–235, May 2009.
- Sven Hirsch, Dominik Szczerba, Bryn Lloyd, Michael Bajka, Niels Kuster, and Gábor Székely, "A Mechano-Chemical Model of a Solid Tumor for Therapy Outcome Predictions," in *Lecture Notes in Computer Science: Computational Science – ICCS 2009*, Vol. 5544/2009, pp. 715–724, May 20, 2009.
- Esra Neufeld, Sven Kühn, Gabor Szekely and Niels Kuster, "Measurement, simulation and uncertainty assessment of implant heating during MRI," in *Physics in Medicine and Biology*, Vol. 54, (13), pp. 4151–4169, July 2009.
- Marc Simon Wegmueller, Sonja Huclova, Juerg Froehlich, Michael Oberle, Norbert Felber, Niels Kuster, Wolfgang Fichtner, "Galvanic Coupling Enabling Wireless Implant Communications," in *IEEE Transactions on Instrumentation and Measurement*, Vol. 58, (8), pp. 2618–2625, August 2009.
- Dominik Szczerba, Bryn A. Lloyd, Michael Bajka, and Gabor Szekely, "A Multiphysics Model of Myoma Growth," in *International Journal for Multiscale Computational Engineering*, Vol. 7, (1), pp. 17–27, August 2009.
- Kathrin Burckhardt, Dominik Szczerba, Jed Brown, Krishnamurthy Muralidhar, and Gabor Szekely, "Fast Implicit Simulation of Oscillatory Flow in Human Abdominal Bifurcation using a Schur Complement Preconditioner," in *Lecture Notes in Computer Science: Euro-Par 2009 - Parallel Processing*, Vol. 5704/200, pp. 747–759, August 22, 2009.
- Chung-Huan Li, Erdem Ofli, Nicolas Chavannes, and Niels Kuster, "Effects of Hand Phantom on Mobile Phone Antenna Performance," in *IEEE Transactions on Antenna and Propagation*, Vol. 57, (9), pp. 2763–2770, September 2009.
- Sven Kuhn, Eugenia Cabot, Andreas Christ, Myles Capstick and Niels Kuster, "Assessment of the radio-frequency electromagnetic fields induced in the human body from mobile phones used with hands-free kits," in *Physics in Medicine and Biology*, Vol. 54, (18), pp. 5493–5508, September 21, 2009.
- Robert H. P. McGregor, Dominik Szczerba, Krishnamurthy Muralidhar and Gábor Székely, "A Fast Alternative to Computational Fluid Dynamics for High Quality Imaging of Blood Flow," in *Lecture Notes in Computer Science: Medical Image Computing and Computer-Assisted Intervention – MICCAI 2009*, Vol. 5704/200, pp. 124–131, October 1, 2009.
- Reetta Nylund, Hanna Tammio, Niels Kuster, and Dariusz Leszczynski, "Proteomic Analysis of the Response of Human Endothelial Cell Line EA.hy926 to 1800 GSM Mobile Phone Radiation," in *Journal of Proteomics & Bioinformatics*, Vol. 2, (10), pp. 455–462, October 2009.
- Dominik Szczerba, Haymo Kurz, and Gabor Szekely, "A Computational Model of Intussusceptive Microvascular Growth and Remodeling," in *Journal of Theoretical Biology*, Vol. 261, (4), pp. 570–583, December 21, 2009.
- Frauke Focke, David Schuermann, Niels Kuster, Primo Schär, "DNA fragmentation in human fibroblasts under extremely low frequency electromagnetic field exposure," in *Mutation Research/Fundamental and Molecular Mechanisms of Mutagenesis*, online November 6, 2009.
- Andreas Christ, Wolfgang Kainz, Eckhart G Hahn, Katharina Honegger, Marcel Zefferer, Esra Neufeld, Wolfgang Rascher, Rolf Janka, Werner Bautz, Ji Chen, Berthold Kiefer, Peter Schmitt, Hans-Peter Hollenbach, Jianxiang Shen, Michael Oberle, Dominik Szczerba, Anthony Kam, Joshua W Guag and Niels Kuster, "The Virtual Family—Development of surface-based anatomical models of two adults and two children for dosimetric simulations," in *Physics in Medicine and Biology*, online December 21, 2009.
- Marc Simon Wegmueller, Michael Oberle, Norbert Felber, Niels Kuster and Wolfgang Fichtner, "Signal Transmission by Galvanic Coupling Through the Human Body," in *IEEE Transactions on Instrumentation and Measurement*, online October 6, 2009.
- Andreas Christ, Marie-Christine Gosselin, Sven Kühn and Niels Kuster, "Impact of pinna compression on the RF absorption in the heads of adult and juvenile cell phone users," *Bioelectromagnetics*, in press.
- Andreas Christ, Marie-Christine Gosselin, Maria Christopoulou, Sven Kühn and Niels Kuster, "Age dependent tissue-specific exposure of cell phone users," *Physics in Medicine and Biology*, in press.
- M M Paulides, J F Bakker, M Linthorst, J van der Zee, Z Rijnen, E Neufeld, P M T Pattynama, P P Jansen, P C Levendag and G C van Rhoon, "The clinical feasibility of deep hyperthermia treatment in the head and neck: new challenges for positioning and temperature measurement," in *Physics in Medicine and Biology*, in press.
- Sven Kuehn, Valentin Keller, Christof Sulser, and Niels Kuster, "Over-the-air performance of GSM cellular phones only marginally affect the user's average exposure in GSM networks," *IEEE Transactions on Antennas and Propagation*, in press.

IT^{IS} FOUNDATION

History

The IT'IS Foundation was established in 1999 through the initiative and support of the Swiss Federal Institute of Technology in Zurich (ETH), the global wireless communications industry and several government agencies. IT'IS stands for Information Technologies in Society.

Legal status

IT'IS is a non-profit tax-exempt research foundation.

Vision

The Foundation for Research on Information Technologies in Society is dedicated to expanding the scientific basis of the safe and beneficial application of electromagnetic energy in health and information technologies.

IT'IS is committed to improving and advancing the quality of life of people with disabilities through innovative research and application of emerging technologies.

IT'IS Foundation is an independent research institute.

IT'IS Foundation endeavors to provide a proactive, creative and innovative research environment for the cultivation of sound science & research and education.

Funding

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