

## Short Biography

**Prof. Dr. Alfred Vogel, Ph.D.**



Prof. Alfred Vogel is Director of the Institute of Biomedical Optics (BMO), University of Luebeck, Germany, and Deputy CEO of the Medical Laser Center Luebeck GmbH. He received the Ph.D. degree in Physics from University Goettingen in 1987, and the degree of Habilitated Doctor of Physics from the University of Luebeck, Germany, in 1999. Since 2010 he is also Adjunct Professor of Xi'an Jiaotong University, PR China.

Dr. Vogel is fellow of the Optical Society (OSA) and of SPIE. He published 89 peer-reviewed papers, 6 book chapters, and 51 proceedings papers (together 10 070 citations,  $h = 42$  according to Google Scholar, or 6045 citations,  $h = 35$  according to ISI Web of knowledge, respectively). He holds 11 patents and has filed another 5 patent applications. He has delivered 167 plenary, key note, and invited talks.

Dr. Vogel is editorial board member for the *Journal of Biomedical Optics* since 2002, served as associate editor of *Optics Express* from 2006-2009, and is advisory editor of *Biomedical Optics Express* since its launching in 2010. He reviewed for 54 international scientific journals, and served as reviewer for 30 German and international funding agencies and universities.

Dr. Vogel has made major experimental and theoretical contributions to the field of pulsed laser interactions with molecules, cells and biological tissues. He developed comprehensive theoretical frameworks for pulsed laser tissue interactions ranging from photochemical changes to ablation, and for controlled nonlinear energy deposition in transparent dielectrics. He invented new technologies for imaging and characterization of plasmas, shock waves, cavitation bubbles, and ablation plume dynamics. His research encompasses surface ablation through linear absorption of ultraviolet and infrared laser pulses, ablation processes in a liquid environment such as in blood vessels or joints, as well as precise plasma-mediated ablation, surgery, and molecular modifications within nominally transparent materials such as ocular tissues and cells. His work in these areas has led to innovative strategies for improving cellular micro/nano surgery, intraocular surgery, and refractive surgery.