



Curriculum vitae of Dr. Peter Hering, Professor of Physics:

Peter Hering was born in Messkirch/Baden, Germany. He studied physics and mathematics in Freiburg, Bristol and at the newly founded University of Kaiserslautern, where he received his diploma and Ph.D. degree in physics (Supervisor Wolfgang Demtröder and Klaas Bergmann). From 1978-79 he worked as a research associate at the well-known Rice Quantum Institute in Houston/Texas with Phil Brooks and Bob Curl (Nobel Prize 1996) on transition state spectroscopy. From 1979-1991 he was with the Max-Planck-Institute for Quantum Optics (Karl L. Kompa) in Garching, Germany, mainly working in laser

chemistry with emphasis on nonadiabatic collision processes and the development of new nonlinear laser spectroscopic techniques.

Since 1991 he is full Professor of Physics at the newly founded interdisciplinary institute of Laser Medicine at the University of Düsseldorf. His work there is devoted to basic research in analytical and diagnostical laser application in biomedicine and environmental research. In October 1999 he got additionally an appointment at caesar (center of advanced european studies and research) in Bonn as an external independent project leader in the triplet "Laser and Computer Aided Surgery". The focus there is on the development of new imaging methods based on short-pulsed holography and on contact less methods for bone treatment. Recent areas of application are the treatment of extremely temperature-sensitive materials with pulsed lasers and the development and implementation of a mobile holographic camera in medicine (craniofacial surgery, plastic surgery), archaeology, criminology and forensic medicine.

Fundamental research

- new non-linear spectroscopic methods
- molecular cluster spectroscopy
- femto second spectroscopy of molecular collisions and chemical reactions
- trace gas analysis with new laser spectroscopic methods (CARS, DFWM, CRDS)

Biomedical applications

- Laser assisted isotope separation techniques, in particular ^{13}C , ^{12}C and ^{28}Si
- IR spectroscopy (IR Laser and NDIR) for breath analysis and diagnostics
- special light guides for photo ablative techniques (minimal invasive surgery)
- spectroscopy of turbid media
- Development of high precision 3D imaging techniques based on holograms
- Laser ablation in medicine and material processing
- Laser safety, Laser pointer

Publications

more than a 200 papers in refereed international journals

many articles in books and conference proceedings

many invited talks in conferences and colloquia

18 Patents

supervisor of many national and international diploma students, PhD students and Postdocs

many contributions in national and international media (TV, radio, print media)

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