

## Prof. Dr. Gerwert, Klaus

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### Education:

**1975-1981** Study of Physics at Muenster University, **1982-1985** graduate student in biophysical chemistry, **1986** Dr. rer. Nat, ("summa cum laude"), University of Freiburg, Faculty of Chemistry and Pharmacy, **1992** Habilitation (venia legendi for Physical Chemistry), Bielefeld University, Faculty of Chemistry

### Positions:

**1986-1990** Research Scientist, Max-Planck-Institute in Dortmund (Director B. Hess), **1990-1993** Heisenberg-fellow of the Deutsche Forschungsgemeinschaft at the MPI Dortmund and Scripps Research Institute, La Jolla, USA, Molecular Biology Department, Chairman Professor Peter Wright, **since 1993** Chair of Biophysics, Faculty of Biology, 1994 "Cooptation" in the Faculty of Physics, **since 2008** Director (part time) at the Max-Planck-Partner-Institute for Computational Biology, Shanghai

### Scientific Honours / Awards:

**1990** "Visiting investigator" at Scripps Research Institute, La Jolla, USA **1990** Heisenberg fellowship, Deutsche Forschungsgemeinschaft, **1992** **Karl Arnold Jansen** Award of „Rheinisch-Westfälische Akademie der Wissenschaften“, Düsseldorf, **2006** Award „Innovationspreis Ruhr 2006“ by the Ministerpräsident of NRW and "Krupp-Foundation", **2008** Member of the Academy of Sciences (NRW), **2008** Fellow of the Max-Planck-Society

### Further activities (selection):

**1995-2001** Founding member of the SFB 394: "Strukturelemente und Molekulare Mechanismen von Proteinen bei Energieübertragungen und Signalvermittlung", **1997-2008** Founding member of SFB 480 "Molekulare Biologie komplexer Leistungen von botanischen Systemen", **since 2002** Founding member and Speaker of Proteincenter at the Ruhr-University Bochum, **since 2004** Founding member and Chairman of SFB 642 "GTP und ATP-dependent membrane processes", **since 2009** Founding member and Chairman of the Protein Research Department (PRD), **since 2010** Founding member and Chairman of PURE "Protein Research Unit Ruhr within Europe"

### Research areas:

Molecular reaction mechanisms and interactions of membrane and membrane-bound proteins, microbial rhodopsins: protontransfer, protein-bound water; Photosynthesis: electron and proton transfer: Ras-superfamily: GTPase mechanisms and interactions, GPCRs: ligand binding and interaction with G-Proteins, development novel time-resolved FTIR and vibrational microspectroscopy for translational studies of proteins, body liquids and tissues in clinical studies

### 5 Publications:

- Wolf, S., Freier, E., Potschies, M., Hofmann, E. and Gerwert, K. (2010), Directional Proton Transfer in Membrane Proteins Achieved through protonated Protein-Bound Water Molecules: A Proton-Diode, *Angewandte Chemie*, **122**: 7041-7046

- Elfrink, K., Ollesch, J., Stöhr, C., Willbold, D., Riesner, D., Gerwert, K. (2008): "Structural changes of membrane anchored PrP<sup>C</sup>", *Proc. Natl. Acad. Sci.* **105**, No. 31, 10815-10819
- Garczarek, F., Gerwert, K. (2006): "Functional Waters in Protein Proton Transfer", *Nature* **439**, 109-112
- Kötting, C., Blessenohl, M., Suveyzdis, Y., Goody, R.S., Wittinghofer, A., Gerwert, K. (2006): "A phosphoryl transfer intermediate in the GTPase-reaction of Ras in complex with its GTPase-activating protein", *Proc. Natl. Acad. Sci. USA*, (Coverstory)
- Remy, A., Gerwert, K. (2003): "Coupling of light-induced electron transfer to proton uptake in photosynthesis", *Nature Structural Biology* **10**, 637-644