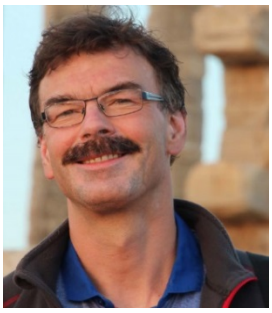

**Curriculum Vitae**
**Peter Pohl**


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- **EDUCATION**

1994 MD, Medical Faculty, Martin-Luther-University, Halle, Germany
1989 Diploma in Biophysics, Pirogov Institute Moscow, Russia

- **CURRENT POSITION(S)**

2004 - Full Professor of Biophysics
Department of Physics, Faculty of Engineering and Natural Sciences,
Johannes Kepler University, Austria

- **FELLOWSHIPS AND AWARDS**

2001 – 2004 Heisenberg Fellow of the Deutsche Forschungsgemeinschaft at the Leibniz Institute for Molecular Pharmacology, Berlin, Germany

- **MAIN AREAS OF RESEARCH**

My research focuses on molecular mechanisms of membrane transport. Most of the work is carried out on purified and reconstituted proteins. We have pioneered the application of electrochemical microscopy for monitoring both water and weak acid transport across aquaporins. My group found that instead of obeying macroscopic laws of hydrodynamics, water flow through narrow biological channels is governed by the total number of hydrogen bonds that single-file waters may form with pore-lining residues. We also contributed to membrane bioenergetics by demonstrating that proton surface migration between membrane proteins does not rely on proton binding to titratable moieties, but is due to a large entropic barrier – conceivably generated by the waters of membrane hydration. Another field of interest is membrane protein translocation through SecYEG: We showed that the resting channel forms a barrier for small molecules on its own and that this barrier is voltage-dependent. In recent years we have devoted more and more attention to the effects of membrane mechanics on membrane transport phenomena: The major achievement this far is the description of the driving forces behind the registration of membrane domains from different leaflets.

- **COMMISSIONS OF TRUST**

2014 – Editorial Board Member: Scientific Reports
2017- Council Member of IUPAB (International Union of Pure and Applied Biophysics)

- **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

1995 – Member of the American Biophysical Society, USA
1999 – Member of the German Biophysical Society, Germany
2004 – Founding Head of the “Medical Biophysics” Subgroup, German Bioph. Society
2004 - Member of the American Society for Biochemistry and Molecular Biology
2009 - Member of Biophysics Austria, Austria
2014 - Member of the Austrian Association of Molecular Life Sciences and Biotechnology

- **TOP TEN PAPERS**

1. Karner, A., B. Nimmervoll, B. Plochberger, E. Klotzsch, A. Horner, D. G. Knyazev, R. Kuttner, K. Winkler, L. Winter, C. Siligan, N. Ollinger, P. Pohl, and J. Preiner. 2017. Tuning membrane protein mobility by confinement into nanodomains. *Nat. Nanotech.* 12:260-266.
2. Bellissent-Funel, M.-C., A. Hassanali, M. Havenith, R. Henchman, P. Pohl, F. Sterpone, D. van der Spoel, Y. Xu, and A. E. Garcia. 2016. Water Determines the Structure and Dynamics of Proteins. *Chem. Rev.* 116:7673-7697.
3. Agmon, N., H. J. Bakker, R. K. Campen, R. H. Henchman, P. Pohl, S. Roke, M. Thämer, and A. Hassanali. 2016. Protons and hydroxide ions in aqueous systems. *Chem. Rev.* 116:7642-7672.
4. Horner, A., F. Zocher, J. Preiner, N. Ollinger, C. Siligan, S. A. Akimov, and P. Pohl. 2015. The mobility of single-file water molecules is governed by the number of H-bonds they may form with channel-lining residues. *Science Advances* 1:e1400083.
5. Hoomann, T., N. Jahnke, A. Horner, S. Keller, and P. Pohl. 2013. Filter gate closure inhibits ion but not water transport through potassium channels. *Proc. Natl. Acad. Sci. U. S. A.* 110:10842-10847.
6. Zhang, C., D. G. Knyazev, Y. A. Vereshaga, E. Ippoliti, T. H. Nguyen, P. Carloni, and P. Pohl. 2012. Water at hydrophobic interfaces delays proton surface-to-bulk transfer and provides a pathway for lateral proton diffusion. *Proc. Natl. Acad. Sci. U. S. A.* 109:9744-9749.
7. Springer, A., V. Hagen, D. A. Cherepanov, Y. N. Antonenko, and P. Pohl. 2011. Protons migrate along interfacial water without significant contributions from jumps between ionizable groups on the membrane surface. *Proc. Natl. Acad. Sci. U. S. A.* 108: 14461-14466.
8. Mathai, J. C., A. Missner, P. Kügler, S. M. Saparov, M. L. Zeidel, J. K. Lee, and P. Pohl. 2009. No facilitator required for membrane transport of hydrogen sulfide. *Proc. Natl. Acad. Sci. U. S. A.* 106:16633-16638.
9. Saparov, S. M., K. Erlandson, K. Cannon, J. Schaletzky, S. Schulman, T. A. Rapoport, P. Pohl. 2007. Determining the conductance of the SecY protein translocation channel for small molecules. *Mol. Cell* 26:501-509.
10. Saparov, S. M. and P. Pohl. 2004. Beyond the diffusion limit: Water flow through the empty bacterial potassium channel. *Proc. Natl. Acad. Sci. U. S. A*. 101:4805-4809.