

# Curriculum Vitae

---

**Marian Paluch**

Data of birth: 28 May 1968

---

## Education and Qualifications

- 2004      **Habilitation** in Physics at the Silesian University  
Thesis: *Super-Arrhenius behaviour the structural relaxation times in glass forming liquids and polymers.*
- 1994-1998    **Ph.D.** in Physics (Condensed Matter Physics) at the Silesian University  
Thesis: *Effect of Temperature and Pressure on Dynamics in Glass Forming Liquids;*
- 

## International experience

<b>2007</b> (2 months)	<b>The Hebrew University</b> Department of Applied Physics Jerusalem, Israel	<b>Visiting scientist;</b> giving of number of talks on molecular dynamic of glass forming liquids under high pressure
<b>2006</b> (3 months)	<b>The University of Akron</b> Department of Polymer Science Akron, USA	<b>Visiting scientist;</b> tutorial for students on dielectric spectroscopy
<b>2004</b> (2 months)	<b>The University of Pisa</b> Department of Physics Pisa, Italy	<b>Visiting scientist;</b> assist in the building of the high-pressure dielectric set-up
<b>2003</b> (3 months)	<b>Naval Research Laboratory,</b> Washington, D.C., USA	<b>Visiting scientist;</b> invited to build high pressure set-up for dielectric studies; investigation of liquid-glass transition under high pressure
<b>2001-2002</b> (1 year)	<b>Naval Research Laboratory,</b> Washington, D.C., USA	
<b>1999-2001</b> (2 years)	<b>Max-Planck Institute for Polymer Research</b> Mainz, Germany	<b>Post-doc;</b> responsible for dielectric spectroscopy laboratory; investigation of molecular dynamics of polymers

## Research interests

1. Dynamics of glass transition in low-molecular weight glass-forming liquids and polymers.
2. Relaxation and thermodynamic properties under high pressure conditions of complex liquids: supercooled liquids, polymer melts, liquid crystals and bio-fluids.
3. Critical phenomena and phase transition in critical solutions of limited miscibility.
4. The experimental techniques of special interest:
  - broadband dielectric spectroscopy,
  - mechanical spectroscopy,
  - dynamic light scattering.

---

## International Collaboration

1. **Prof. P. A. Rolla**, INFN and Dipartimento di Fisica, Università di Pisa, Pisa, Italy;
  2. **Prof. G. Dlubek**, ITA Institute für Innovative Technologien, Köthen/Halle, Germany;
  3. **Prof. E. Rösler**, Physikalisches Institut, Universität Bayreuth, Bayreuth, Germany;
  4. **Prof. J. Dyre**, Dep. of Mathematics and Physics, Roskilde University, Roskilde, Denmark;
  5. **Dr. K. L. Ngai** and **Dr. M. Roland**, Naval Research Laboratory, Washington DC, USA;
  6. **Prof. A. Sokolov**, Department of Polymer Science, University in Akron, Ohio, USA;
  7. **Prof. Y. Feldman**, Department of Applied Physics, The Hebrew University, Jerusalem, Israel;
  8. **Prof. C. León**, GFMC, Universidad Complutense, Madrid, Spain
- 

## Grants

From 1996 up to now, participation in 8 research projects (as a director in 4 of them).

---

## Publications

Co-author or author of more than 110 publications in international referred journals (e.g. Phys. Rev. Lett. [5 papers], Phys. Rev. E or B [24 papers], J. Chem. Phys. [31 papers], J. Phys. Chem. [7 papers], J. Phys.: Condens. Matter [10 papers], Macromolecules [2 papers], J. Non Cryst. Solids [5 papers], Europhysics Letters [2 papers], etc).

Co-author of review paper: C. M. Roland, S. Hensel-Bielowka, **M. Paluch**, R. Casalini, *Supercooled dynamics of glass-forming liquids and polymers under hydrostatic pressure* Rep. Prog. Phys. **68** 1405 (2005).

Co-author of chapter in book: K.L. Ngai, R. Casalini, S. Capaccioli, **M. Paluch**, C.M. Roland, *Dispersion of the Structural Relaxation and the Vitrification of Liquids*, pp. 79-138 volume in monograph “*Fractals, Diffusion and Relaxation in Disordered Complex Systems*”, Advances in Chemical Physics **133**, (ISBN: 0-471-72507-2), Y.P Kalmykov, W.T. Coffey, S. A. Rice ed., Wiley, New York (2006).

### Selected publications:

1. K. L. Ngai, and **M. Paluch**, *Classification of secondary relaxation in glass-formers based on dynamic properties*. J. Chem. Phys. **120**, 857 (2004) **[103 citation]**
2. **M. Paluch**, C. M. Roland, S. Pawlus, J. Ziolo and K. L. Ngai, *Does the Arrhenius temperature dependence of the Johari-Goldstein relaxation persist above  $T_g$ ?*, Phys. Rev. Lett. **91**, 115701 (2003).
3. **M. Paluch**, M. Sekula, S. Pawlus, S. J. Rzoska, C. M. Roland and J. Ziolo, *Test of the Einstein-Debye relation in supercooled dibutylphthalate at pressures up to 1.4 GPa*, Phys. Rev. Lett. **90**, 175702 (2003).
4. K. Kaminski, S. Maslanka, J. Ziolo, **M. Paluch**, K.J. McGrath, C.M. Roland *Dielectric relaxation of alpha-tocopherol acetate (vitamin E)*, Phys. Rev. E **75** 011903 (2007).
5. A. Döss, **M. Paluch**, H. Sillescu, and G. Hinze, *From strong to fragile glass formers: Secondary relaxation in polyalcohols*, Phys. Rev. Lett. **88**, 95701 (2002).

---

### Selected Conferences

- 2007      **Lecture:** *Glass formation and supercooled liquids under high pressure.* Italian-Israel Conference Meeting, Weizman Institute, (Israel) 12-15 March
- 2006      **Opening lecture:** *Effect of high pressure on relaxation dynamics of glass-forming liquids.* 4<sup>th</sup> workshop on non-equilibrium phenomena in supercooled fluids, glasses and amorphous materials, Pisa (Italy) 17-22 September.
- 2005      **Talk:** *The importance of a class of secondary relaxation process in glass-forming liquids.* Second International Conference on Flow Dynamics, Sendai (Japan), 16-18 November
- 2004      **Talk:** *Peculiar behaviour of secondary relaxation dynamics in tri-propylene glycol.* 5th International Discussion Meeting on Relaxations in Complex Systems, Lille (France).
- 2004      **Talk:** *Excess wing versus slow  $\beta$  relaxation process – high pressure dielectric studies* International Workshop on Dynamics in Viscous Liquids, Munich (Germany), 14-17 March
- 2003      **Talk:** *Volume effects on the molecular rearrangements in vicinity of glass transition* Slow Dynamics in Complex Systems, Sendai (Japan), 3-8 November
- 

### Honours/Awards

1. Board member of the International Dielectrics Society (2006)
2. President of Silesian University award in 2006 (II degree); 2005 (III degree) and 2003 (I degree)
3. A holder of a scholarship of the Foundation for Polish Science (FNP) (1.01.1998 – 31.12.1998).