Jadwiga Tritt-Goc

Biography

Educational Qualification:

2008: Professor's title in Physics, A. Mickiewicz University, Poznań Poland;

1996: Habilitation, Institute of Molecular Physics, Polish Academy of Sciences (PAS) Poznań;

1985: Doctor in Physics, Institute of Molecular Physics, PAS Poznań;

1977: Master of Science degree in Physics (with Honors), A. Mickiewicz, University, Poznań.

Professional experience:

2019- now: Coordinator of the discipline of physics at the Poznań Doctoral School of Institutes of the Polish Academy of Sciences;

2011 – now: Head of the Ph.D. Graduate Studies in the PAS;

2011 – now: Head of the division: Division of Physics of Dielectrics and Molecular Spectroscopy in PAS;

2008 – now: Professor, in PAS Poznań;

2006 – now: Leader of the Nuclear Magnetic Resonance Laboratory in PAS;

(1997 – 2008) Associate Professor and 1985 – 1997 - Assistant Professor, PAS;

(1988 – 1990) Visiting Assistant Professor and Visiting Research Associate;

(1983 – 1985) Department of Physiology and Biophysics, University of Illinois at Chicago, Chicago, USA;

(1985 – 1986) Research Worker, Institute of Molecular Physics, PAS;

(1980 – 1983) Student of Ph.D. Graduate Studies, Institute of Molecular Physics PAS.

Publications:

107 papers in Web of Science

Others:

Over 50 inviting lectures on the international conferences and 35 seminars outside the Institute of Molecular Physics, PAS.

Current research interest:

Proton conducting composites based on cellulose functionalized with heterocyclic molecules containing nitrogen;

Low Molecular Weight Organogelators: thermal stabilities, molecular dynamics, gel network structure, solvent-gelator interaction;

Molecular dynamics in new dielectric materials especially proton conducting materials;

Nuclear Magnetic and Dielectric Relaxation in Polymers;

Magnetic Resonance Imaging in hydrophilic polymers: diffusion, swelling, drug realized;

Relaxation, fluid transport, and diffusion in porous materials;

1D and 2D imaging of coarsely structured materials;

Multidimensionally resolved cryoporometric pore size distributions.

Supervisor of 5 PhD theses:

(2013-2017) Iga Smolarkiewicz, *Preparation and properties of proton conductor polymers made of microcrystalline cellulose functionalized with heterocyclic molecules*;

(2005-2009) Michał Bielejewski, *Molecular dynamics of the organic gelator 1,2-O-(1-ethylopropylidene)-a-D-Glucofuranose and the thermal properties of its gels*;

(2000-2005) Adam Rachocki, Molecular *mechanism of the magnetic and dielectric relaxation in the cellulose and derivatives*;

(2000-2005) Joanna Boguszyńska, *The measurements of the porosity and water transport in the cement by NMR methods;*

(2000-2005) Joanna Kowalczuk, *The gel layer formation in the hydroxypropyl methylcellulose studied by magnetic resonance imaging*.

External international opponent in PhD defense:

(2021) Carina Dahlberg, *Drugs and polymers in dissolving solid dispersions: NMR imaging and spectroscopy*, Promoter Prof. Istvan Furo, Division of Physical Chemistry, KTH, Stockholm, Sweden.

Teaching:

(1998 - 2004) Lectures on *Nuclear Magnetic Resonance and Magnetic Resonance Imaging** at Department of Technical Physics, Technical University Poznań.

* on the basis of these lectures I wrote the book: Wprowadzenie do tomografii magnetyczno-rezonansowej, Ośrodek Wydawnictw Naukowych, Poznań 2003.

Research Project: Leader:

(2018-2022) *New proton conducting composites of nanocrystalline cellulose doped by nitrogen-containing heterocyclic molecules: from synthesis to conducting mechanism*, Supported by the National Science Centre;

(2011-2014) *The solvent-gelator interaction at the pore surface in molecular gels. The NMR relaxometry and diffusometry studies*, Supported by the Ministry of Science and Higher Education;

(2007-2009) *A new molecular weight gelators: the study of the gel formation and molecular dynamics*, Supported by the Ministry of Science and Higher Education;

(2004-2005) *Centre of Excellence Magnetic and Molecular Materials for Future Electronics* within 6 Programme Framework EU - vice coordinator, Supported by EU;

(2002-2003) *The application of magnetic resonance imaging and relaxation analysis to improve concrete performance*, British-Polish Research Partner Programme;

(2000-2002) *Diffusion and mobility of the gel layer in controlled release drugs studied by MRI*, Supported by the Polish Committee for Scientific Research;

(1995-1998) *The NMR studies of normal and excited molecular state in sodium nitroprusside monocrystals,* Supported by the Polish Committee for Scientific Research.

Research Project: Main Investigator or Coordinator of research groups:

(2016-2021) Action CA15209 *European Network on NMR Relaxometry*, Coordinator, Managment Committee Member;

(2016-2019) Cultural heritage - searching for modern means and methods of historic wood preservation, Coordinator of NMR group, Supported by Ministry of NPRH;

(1998–2000) *The study of multiphase interaction, especially the interactions of disperse phase with matrix,* Supported by the Polish Committee for Scientific Research;

(1997-1999) *The Use of Novel Additives to Enhance the Performance and Durability of Concrete and Cement Systems*, Supported by NATO;

(1992-1995) *The study of the phase situation and the molecular dynamics in a new family of molecular crystals*, Supported by the Polish Committee for Scientific Research Involvement in international projects.

Membership of professional organizations:

2000 – now: Scientific Council at Institute of Molecular Physics, PAS, Poznań;

2021 – now; 2008-2015: Groupement Ampere Committee Member;

(1999 - 2003) Spatially Resolved Spectroscopy - Division of Group Ampere, Committee member;

1995 – now: Polish Physical Society;

2018 - now: Expert nominated by the Science Centre;

2019: Expert nominated by the Central Committee for degrees and Titles.

Awards for scientific achievements:

2015 Knights Cross of the Order of the Rebirth of Polish;

2017 publication in Annual Reports PAS as a distinction of Polish Academy of Sciences for the conducted research;

Prizes of the Director of the Institute of the Molecular Physics for the best scientific papers in 2020, 2019, 2014, 2006, 1995.