

## Curriculum Vitae

**Mária Omastová, PhD., D.Sc.**

**Nationality:** Slovak

**Affiliation** Polymer Institute

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Mária Omastová, D.Sc. is internationally recognized scientist in the field of multiphase polymer systems, composites and nanocomposites with special properties. In the beginning of her scientific carrier she synthesized various conducting polymers. Paper on surfactants influence on polypyrrole (PPy) conductivity and properties is her most cited one (460 WOS citations). Another part of her research is a combination of conductive polymers with other polymers, carbon nanotubes, or noble metals, to create new kinds of materials for applications as conducting inks, or replacing Pt cathode in solar cells. In the last years, M. Omastová research is also concentrated to the non-covalent and covalent surface modification of carbon nanotubes and to the subsequent preparation of nanocomposites with polymeric matrices for sensors and actuator application (project 7RP). Graphene, graphene oxide, and MoS<sub>2</sub> were modified with magnetic nanoparticles and antibody for creation of nanoplatform for cancer detection. MXene nanocomposites are prepared under supervision of M. Omastová, which are proposed to have EMI shielding properties (Horizon project). Surface and interphase characterization of polymeric, organic and inorganic materials by X- ray photoelectron spectroscopy is one of main interest. She is developing a wide international collaboration that resulted in a number of projects, most recently in the projects of 7 RP EU, Horizon 2020, and MEraNet.

### **Work experience:**

**2015 – present:** member of the Slovak Academy of Sciences Presidium, Deputy Vice-president for Foreign Relation

**1995 -present:** senior research scientist, Polymer Institute, Slovak Academy of Sciences (PI SAS), Bratislava; Slovakia, since 2011 Head of Department of Composite Materials <http://www.polymer.sav.sk/OKM>

**01/1994 – 01/1995** - Post-doctoral stay at Institute of Polymer Research Dresden, Germany

**1993** - junior researcher, PI SAS

**1988 - 1992** - PhD. student, PI SAS

### **Education and training:**

**M.Sc.** in physical chemistry, Slovak Technical University, Faculty of Chemical Technology, Bratislava, Slovakia, 1985

**Ph.D.** in macromolecular chemistry, Slovak Academy of Sciences (SAS), Bratislava, 1993. Ph.D. thesis "Synthesis of polypyrrole on the presence of pyridinium chlorochromate and study of its properties", supervisors: Prof. Milan Lazár, D.Sc, Dr. Stanislav Košina.

**D.Sc.** - Doctor of Sciences in macromolecular chemistry, SAS, Bratislava, 2009.

### **Research interests:**

- polymeric nanocomposites with nanofillers, carbon nanotubes, graphene, montmorillonite, MXene, etc., preparation and properties, sensors and actuators
- conducting composites and blends, preparation and study of their properties
- conducting polymers, mechanism of the polymerization, characterization and properties
- surface and interphase characterization of polymeric, organic and inorganic materials by X- ray photoelectron spectroscopy

### **Additional information:**

**WOS ID E-8059 2010**, Scopus ID: 7004071813, [https://www.researchgate.net/profile/Maria\\_Omastova](https://www.researchgate.net/profile/Maria_Omastova)

Total number of journal publications: 185 (170 WOS)

Number of book chapters: 6

Number of citations: 4200+

Hirsch index, WOS 35

Invited and plenary lectures 37

More than 250 oral and poster presentations in scientific conferences.

Supervising 9 PhD students

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### **Awards:**

**1993** - Winner of the competition the best paper of young scientist at PI SAS

**1996** - Award from Literary found, Slovak Republic for young scientists  
**2001** – Award of the journal Chemical Papers for the best paper of the year 2001, ”*Polyaniline and Polypyrrole – Two Representatives of the Conducting Polymers*”  
**2005** – Award of the American Chemical Society in the framework of the International Initiatives Program  
**2011** – M. Omastová team was ranked in the category *excellent* by Academic Ranking and Rating Agency ”*Identification of high scientific teams and their members in Slovak Academy of Sciences*”  
**2012** – Award of the Slovak Academy of Sciences for collection of scientific publications and work in the interdisciplinary research of electrically conductive polymers, composites, and nanocomposites  
**2012** – Member of the Learned Society, Slovak Republic  
**2005, 2010 and 2013** – invited professorship for one month stay at University Paris-7-Denis Diderot, France  
**2012 and 2016** - Prize of the Literary Fund for the three-year scientific citations in Technical sciences  
**2015** - Daniel Belluš Medal for outstanding merits for the development of chemistry  
**2016** - Honorary member of the Czech Chemical Society  
**2017** - Scientist of the Year 2016  
**2019**- President of the Slovak Republic award Pribina's Cross I. class, for extraordinary merits for the economic development of the Slovak Republic and significant scientific results in the field of polymer chemistry.

#### **International cooperation:**

- Institute of Macromolecular chemistry, Academy of Sciences of the Czech Republic, Prague
- Leibniz Institute of Polymer Research, Germany, www.ipfdd.de
- Chemical Research Center, Hungarian Academy of Sciences, Budapest, Hungary
- Centro Nacional de Microelectronica, Spain, www.cnm.es
- Istanbul Technical University, Istanbul, Turkey
- Cavendish Laboratory, Cambridge, UK, www.phy.cam.ac.uk,
- University Paris-7-Denis Diderot, CNRS, UMR 7086, Paris, France
- Institute for Mechanics of Materials, University of Latvia, Riga, Latvia
- Kaunas University of Technology, Kaunas, Lithuania, and many others

#### **Other activities:**

- President of the Slovak Chemical Society (2013-2014), vice –president (2015-2016),
- Vice -president of the Polymer division, Slovak Chemical Society
- Representative of Polymer Division, Slovak Chemical Society in European Polymer Federation
- Chairperson of Meetings of the Slovak and Czech Chemical Societies organized in 2015, 2017, 2019
- Chairperson of the *20<sup>th</sup> Bratislava International Conference on Macromolecules, Advanced Polymeric Materials*, organized in June 2006, Bratislava, Slovakia
- Chairperson of the conference EUROFILLERS 2013, August 2013, Bratislava
- Chairperson of the conference New Trends in Solar Cells 2016, April 2016, Bratislava  
<http://www.solarcells.sav.sk/>

#### **The most important projects within last 5 years, principal investigator for PISAS: M. Omastová**

1. **Multifunctional polymer composites doped with novel 2D nanoparticles for advanced applications.**  
 Evidence project number: H2020-MSCA-RISE-2017 Project GA 777810.  
 Project duration 05.2018 – 04.2022. Budget for PI SAS: 110 000 Eur.
2. **Graphene-based nanoplatform for detection of cancer.** Project APVV14-0120 (Slovakia).  
 Project duration 07.2015 – 06.2019. Budget: 249 000 Eur.
3. **Advanced polymer composites filled with novel 2D nanoparticles.** M-ERA.NET Call 2017.  
 Project duration 09/2018 – 08/2021. Budget for PI SAS: 120 000 Eur.
4. **Macro plastic waste in and along the Danube.** Interreg Slovakia-Austria, contract No. Z SKATV023  
 Project duration 09/2017 – 03/2021. Budget for PI SAS: 255 000 Eur.
5. **Polymeric materials for advanced application.** Slovak VEGA project 2/0010/18  
 Period: 01/2018 – 12/2021. Proposed budget for whole period: 95 000 Eur.

Bratislava, July 2020