



**Pavol Hvizdoš, PhD. MSc.**

**Director**

Institute of Materials Research of the Slovak Academy of Sciences

Watsonova 47, 040 01 Košice, Slovakia

Phone.: +421 55 7922402

E-mail: [phvizdos@saske.sk](mailto:phvizdos@saske.sk)

URL: [https://www.sav.sk/?lang=sk&doc=user-org-user&user\\_no=1423&lang\\_change=en](https://www.sav.sk/?lang=sk&doc=user-org-user&user_no=1423&lang_change=en)

**Current position(s):**

Director

Senior Researcher

**Profile:**

Dr. Pavol Hvizdoš is a renown scientist in the field of research and development of advanced ceramic materials.

Since 1988 he has been working at Institute of Materials Research of Slovak Academy of Sciences, where he was a PhD student, scientist, senior scientist, vice-head of scientific department, member and later chairman of the scientific board. At present he serves as the director of the institute.

He worked as visiting research fellow and taught at universities in Slovakia, United Kingdom, and Spain. He has lead several national and international projects.

Main areas of his scientific interest are microstructure and mechanical properties of composite structural ceramics, layered and functionally gradient materials, composite intermetallics. His scientific expertise includes microstructural characterization of ceramics (scanning and transmission electron microscopy, optical microscopy, atomic force microscopy); mechanical testing of ceramics at room temperatures (resistance to fracture, fracture toughness, reinforcing mechanisms in polycrystalline ceramics, fatigue behaviour) contact problems (macroindentation, instrumental (nano)indentation, scratch testing, tribology), high temperatures behaviour (resistance to creep, determination of creep mechanisms).

He authored and co-authored more than 200 scientific publications, for which more than 900 citations are registered. He has given 12 invited lectures both in Slovakia and abroad (h-index: 16).

Has been editor of conference proceedings, reviewer of scientific journal worldwide, reviewer of domestic and foreign scientific projects.

**Experience:**

- 2014 - director of IMR SAS
- 2013-2014 chairman of scientific board of IMR SAS
- 2008-2014 senior researcher, IMR SAS
- 2003-2008 research fellow Ramon y Cajal, UPC, Barcelona, Spain
- 1999-2002 vice-head of scientific department, IMR SAS
- 1999 researcher IMR SAS
- 1996 PhD. – TU Košice, Physical metallurgy
- 1988-1996 research assistant and PhD student, IMR SAS
- 1988 RNDr. (MSc.) – UPJŠ Košice, Solid state physics

**Organisation of Scientific Meetings:**

- Deformation and Fracture in PM Materials (1999, 2011, 2014)
- Fractography of Advanced Ceramics (2001, 2010, 2013, 2016)
- Local Mechanical Properties (2014, 2017)
- European Ceramics Society Conference 2017

#### Editor of publications and proceedings

- Layered, Functional Gradient Ceramics, and Thermal Barrier Coatings, Editors M. Anglada, E. Jiménez-Piqué, P. Hvizdoš, Key Engineering Materials, 2007, vol 333. 296 pages. ISBN 0-87849-424-3
- Proceedings of International Conference Fractography 2009, Editors Ján Dusza and Pavol Hvizdoš, Acta Metallurgica Slovaca Conference, 2010, vol. 1, No. 2., 166 pages. ISSN 1335-1532.
- Proceedings of International Conference Fractography 2012, Editors Ján Dusza and Pavol Hvizdoš, Acta Metallurgica Slovaca Conference, 2013, vol. 3. 281 pages. ISSN 1338-1660.
- Special Issue of Journal of the European Ceramic Society, Fractography of Advanced Ceramics IV, Managing Guest Editor: Pavol Hvizdoš, JECS vol.34, No. 14, November 2014, pp 3245-3432. ISSN 0955-2219
- Special Issue of Journal of the European Ceramic Society, Fractography of Advanced Ceramics V "Fractography from MACRO- to NANO-scale", Managing Guest Editor: Pavol Hvizdoš, JECS 2017, vol.37, No 14.

#### Projects:

##### Principal investigator:

1. COST CA15102: Solutions for Critical Raw Materials Under Extreme Conditions, subtask "Development of advanced ceramics" (2015-2019), EU
2. APVV-15-0014 ProCor - Advanced composite coatings for high temperature corrosion protection of metals (2016-2020), SR (zodp. za ÚMV SAV)
3. APVV-0108-12 ConCer - Development of conductive SiC based ceramics (2013-2017)
4. COST - MP0701: Composites with Novel Functional and Structural Properties by Nanoscale Materials (Nano Composite Materials-NCM), subtask "Tribological properties of ceramic nanostructured composites", (2008-2012)
5. Marie Curie European Reintegration Grant (No MERG-CT-2004-005807): Microstructure and properties of structural layered ceramics, (2005-2006)

#### Five representative publications:

Orcid ID [orcid.org/0000-0002-9536-4514](https://orcid.org/0000-0002-9536-4514)

Scopus Author ID **6603845222**

1. **HVIZDOŠ, Pavol** – DUSZA, Ján – BALÁZSI, Csaba, Tribological properties of Si<sub>3</sub>N<sub>4</sub>-graphene nanocomposites. Journal of the European Ceramic Society, 2013, vol 33., p. 2359-2364
2. **HVIZDOŠ, Pavol** - PUCHÝ, Viktor - DUSZOVÁ, Annamária - DUSZA, Ján - BALÁZSI, Csaba. Tribological and electrical properties of ceramic matrix composites with carbon nanotubes. Ceramics International, 2012, vol. 38, p. 5669-5676.
3. **HVIZDOŠ, Pavol** - JONSSON, Daniel - ANGLADA, Marc - VAN DER BIEST, Omer - ANNÉ, Guy. Mechanical properties and thermal shock behaviour of alumina/zirconia functionally graded material prepared by electrophoretic deposition, Journal of the European Ceramic Society, 27 (2007) 1365-1371.
4. KVETKOVÁ, Lenka - DUSZOVÁ, Annamaria - **HVIZDOŠ, Pavol**; et al. Fracture toughness and toughening mechanisms in graphene platelet reinforced Si<sub>3</sub>N<sub>4</sub> composites, Scripta Materialia, 2012, vol. 66, 793-796.
5. PUCHÝ, Viktor - **HVIZDOŠ, Pavol** - DUSZA, Ján - KOVÁČ, František - INAM, Fawad - REECE, Michael J. Wear resistance of Al<sub>2</sub>O<sub>3</sub>-CNT ceramic nanocomposites at room and high temperatures. Ceramics International, 2013, vol. 39, p. 5821-5826.

#### Patents:

#### Fellowships / Awards / Memberships of Scientific Societies:

2018 - Memorial medal ŽP VVC, s.r.o

2017 - Platinum medal, Faculty of civil engineering TUKE, Košice

2017 - Great medal, Faculty of production technologies, TUKE, Košice  
2017 - Memorial coin, Faculty of Metallurgy TUKE, Košice  
2012 - SAS award for development of scientific infrastructure – member of awarded team  
2008 - SAS Award – team member  
Member Marie Curie Fellows Association (since 2000)  
Member Slovak Silicate Society (since 2012)  
Member European Ceramic Society (since 2012)  
Member European Powder Metallurgy Association (since 2016)  
Member of Scientific Board of FMMR, TUKE, Košice (2015-2019)  
Member Scientific Commission No 7 on Engineering of Grant Agency VEGA, SR, (2016-2020)  
Member of the Assembly of SAS (2017-2021)  
Member Mentoring Committee, Center on Biomaterials for Orthopaedic and Dental Applications,  
Bangalore, Indian Institute of Science, India (since 2018)