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|  | **Assoc Prof Dr Pavol Hvizdoš, DrSc.**  **academician of the LSS**  Director of IMR SAS  ***contact***  Institute of Materials Research of SAS  Watsonova 47, 040 01 Košice, SLOVAKIA  **tel:** + 421 55 792 2401, + 421 55 792 2462  **fax:** + 421 55 792 2408  **email:** [phvizdos@saske.sk](mailto:phvizdos@imr.saske.sk)  [hvizdosp@gmail.com](mailto:hvizdosp@gmail.com) |
| ***CURRICULUM***   * 2023 - academician of the Learned Society of Slovakia * 2020 - DrSc. (doctor of sciences) – VR STU Bratislava, leading scientist * 2020 - associated professor - VŠB TUO, Ostrava, Czech republic * 2014 - director of Institute of Materials Research, Slovak Academy of Sciences (IMR SAS) * 2013-2014 chair of the Scientific Board of IMR SAS * 2008 senior scientist, IMR SAS, Košice * 2003-2008 'Ramon y Cajal' Fellow, UPC, Barcelona, Spain * 2000-2002 Marie Curie Fellow, Queen Mary University of London, UK * 1999-2000 vice-head of the Structural Ceramics Department, IMR SAS * 1999 scientist, IMR SAS * 1998 NATO Research Fellow, Queen Mary & Westfield College, London, UK * 1996 CSc. (PhD. equivalent) – Technical University Košice, Physical Metallurgy * 1988-1996 researcher, PhD student, IMR SAS * 1988 RNDr. (MSc. equivalent) – Šafárik University, Košice, Solid State Physics | |
| ***LINGUISTIC SKILLS***   * English, Spanish, Russian (all fluently) | |
| ***SCIENTIFIC ACTIVITIES***   * **Area of interest:** microstructure and mechanical properties of composite structural ceramics, layered and functionally gradient materials, composite intermetallics * **Professional expertise:** 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).   ***Reviewer of national projects VEGA and APVV***  ***Reviewer of international projects: (DAAD - Germany, SONATA - Poland, MOMENTUM - Hungary, APVT - Czech republic, EIG Concert EU-Japan)***  ***Reviewer for scientific journals:***   * Acta Avionica * Acta Materialia * Acta Metallurgica Slovaca * Advances in Applied Ceramics: Structural, Functional and Bioceramics * Applied Surface Science * Carbon * Ceramics International * Ceramics-Silikáty * Composites Science and Technology * Estonian Journal of Engineering * International Journal of Material Products and Technology * International Journal of Refractory Metals and Hard Materials * Journal of Alloys and Compounds * Journal of European Ceramic Society * Journal of High Temperature Materials and Processes * Journal of Inorganic Materials * Journal of Materials and Design * Journal of Materials Engineering and Performance * Key Engineering Materials * Materials Research Bulletin * Materials Science & Engineering A * Materials Science (Medžiagotyra) * Powder Metallurgy Progress * Polymer Composites * Open Access Library * Processing and Application of Ceramics * RSC Advances * Scripta Materialia * Silicon * Surfaces and Interfaces * Transactions of Nonferrous Metals Society of China * Tribology International * Tribology Transactions * Wear of Materials | |
| ***TEACHING ACTIVITIES***   * Technical University, Košice, Slovakia, lectures, exercises * P.J. Šafárik University, Košice, Slovakia, lectures, exercises * Queen Mary University, London, United Kingdom, lectures, student projects mentor * Universitat Politécnica de Catalunya, Barcelona, Spain, lectures, diploma works supervisor * Technical University Ostrava, Czech republic, lectures * PhD supervisor: 6 PhD students (4 successfully defended), assistant supervisor: 4 PhD students * Supervisor of 10 diploma students, assistant supervisor of 2 diploma students * Supervisor of international study stay fellows (PhDs, post-docs): 15 * co-author of 3 university textbooks | |
| ***PROJECTS (COORDINATOR, PARTICIPANT)***  **Project leader / coordinator**   * APVV-18-0438 REDHYBear - Research and development of energy saving hybrid bearing reducer with lowered wear rate for robotic equipment (for Industry 4.0) (2019-2022), national * VEGA 1/0096/18: Effect of continuous and pulsating liquid jet on microstructure, properties and integrity of materials (2018-2021), national * COST CA15102: Solutions for Critical Raw Materials Under Extreme Conditions, subtask "Development of advanced ceramics" (2015-2019), EU * APVV-15-0014 ProCor - Advanced composite coatings for high temperature corrosion protection of metals (2016-2020), national * APVV-0108-12 ConCer – Development of SiC based Conductive Ceramics (2013-2017), national * VEGA 2/0075/13 Local mechanical properties of bone cement (2013-2015), national * VEGA 2/0120/10: Tribological properties of ceramic nanostructural composites (2010-2012) , national * 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), EU * Marie Curie European Reintegration Grant (No MERG-CT-2004-005807): Microstructure and properties of structural layered ceramics, (2005-2006), EU * HPMCFT-2000-00459 (5th Framework Programme): „Microstructural characterization and mechanical properties at room and elevated temperatures of Si3N4/SiC ceramic nanocomposites”(2000-2002), EU * „Biomaterials“, U1/2000, internal project IMR SAS (2000)   **Participant** on over **30 national and international projects** | |
| ***STAYS ABROAD*** Long-term  * 1.1.1998-31.12.1998 **NATO Postgraduate Programme Fellow**   Queen Mary & Westfield College, London, United Kingdom   * 1.12.2000-30.11.2002 **Marie Curie Individual Fellowship**   Queen Mary University of London, United Kingdom   * 2003-2008 **“Ramon y Cajal” Fellow**   Polytechnic University of Catalonia (UPC), Barcelona, Spain. Short-term  * 1994 – Royal Society grant - 1 month stay at QMW, University of London, London, UK, * 1996 – British Council grant - 1 month stay at QMW, London, UK * 1997 – 1 month study stay in Austria in the frame of academy reciprocal exchange   Erich Schmidt Institut for Solid State Physics, Austrian Academy of Sciences, Leoben  Institute for Structural and Functional Ceramics, Montanuniversität, Leoben. | |
| ***MEMBERSHIPS, AWARDS***   * 2023 - Academician of the Learned Society of Slovakia (LSS) * 2023 - Bronze medal of Faculty of Natural Sciences of Šafárik University, Košice, awarded by the Dean of PF UPJŠ * 2023 - Letter of Appreciation of the Dean of PF UPJŠ, Košice * 2022 - Gold commemorative medal for the development of engineering and support in building the Faculty of Mechanical Engineering Technical University Košice, awarded by the Dean of FME TUKE * 2022 - Science and Technology Award 2021: Team of the Year, awarded by the Ministry of Education of Slovak Republic, team member * 2018 - Memorial medal ŽP VVC, s.r.o, Podbrezová, Slovakia * 2017 - Platinum medal of Faculty of Mechanical Engineering, Technical university, Košice * 2017 - Grand Medal of Faculty of Production Technologies in Prešov, Technical university, Košice * 2017 - Memorial coin of Faculty of Metallurgy, Materials, and Recycling, TU, Košice * 2012 - Slovak Academy of Sciences award for building infrastructure for science * 2008 - Slovak Academy of Sciences Award – member of awarded team * Member of the Marie Curie Fellows Association (since 2000) * Member of Slovak Silicate Society (since 2012) * Member of European Ceramic Society (since 2012) * Member of European Powder Metallurgy Association (since 2016) * Member of Scientific Board of Faculty of Metallurgy, Technical U. Košice, Slovakia (2015-2023)(2023-2027) * Member of Scientific Board of Faculty of Natural Sciences of P.J. Šafárik University, Košice (2020-2023)(2023-2027) * Member of Accrediting Board of Technical University, Košice (2021-2024)(2024-) * Member of Scientific Commission 7 on Engineering of Grant Agency VEGA, Slovakia, (2016-2023) * Member of Assembly of Slovak Academy of Sciences (the top self-governing body of SAS) (2017-2021) * Member of Mentoring Committee, Center on Biomaterials for Orthopaedic and Dental Applications, Indian Institute of Science, Bangalore, India (since 2018) * Member of the SAS Commission for Scientific Qualifications (2021-) * Member of the APVV Council for Technical Sciences (2022-) * Member of the EU Expert Group on Materials Science (2022-) * Member of the ad-hoc working group of the Ministry of Education of the Slovak Republic for the code list of science and technology (2022-) * Chairman of the ad-hoc commission for SKVH (2021-2025) | |
| ***NUMBER OF PUBLICATIONS:*** 380 (117 Current Contents database, 155 WOS)  ***CITATIONS:*** over 2000 (WOS/Scopus), **h-index: 23** LIST OF SELECTED PUBLICATIONS ***Selected journal papers***   * + P. Šajgalík, M. Hnatko, F. Lofaj, P. Hvizdoš, J. Dusza, P. Warbichler, F. Hofer, R. Riedel, E. Lecomte, M.J. Hoffmann, SiC/Si3N4 Nano/Micro-Composite – Processing, RT and HT Mechanical Properties, J. Eur. Ceram. Soc., 20 [4] (2000) 453-462.   + P. Hvizdoš, M. J. Reece, R. Torrecillas: Fatigue Behaviour of Mullite Studied by Indentation Flexure Method, Journal of European Ceramic Society, 21 (2001) 53-61.   + F. Lofaj, P.Hvizdoš, F. Dorčáková, R. Satet, M.J. Hoffmann, A. Ramírez de Arellano López: Indentation moduli and microhardness of RE-Si-Mg-O-N glasses (RE = Sc, Y, La, Sm, Yb and Lu) with different nitrogen content, Material Science and Engineering A357 (2003) pp. 181-187.   + P. Hvizdoš, M. Kašiarová, J. Dusza, M. Hnatko, P. Šajgalík: Mechanical Properties of Si3N4/SiC Nanocomposites Studied by Nanoindentation with Spheres, Journal of European Ceramic Society, 24 (2004) 3307-3315.   + P. Hvizdoš, J. Dusza, W. Steinkellner, K. Kromp: Creep Behaviour of MoSi2 and MoSi2 + SiC Composite, Journal of Materials Science, 39 (2004) 4073-4077.   + J. Dusza, J. Kovalčík, P. Hvizdoš, P. Šajgalík, M. Hnatko, M.J. Reece, Enhanced Creep Resistant Silicon Nitride Based Nanocomposites, Journal of the American Ceramic Society, 88 (2005) 1500-1503.   + P. Hvizdoš, M. Besterci, M. Šlesár, C. Edtmaier: Compressive creep testing of Pt-Y2O3 composites, High Temperature Materials and Processes, 24 [3] (2005) 189-192.   + M. Popa, P. Hvizdoš, G. Anné, J. M. Calderón-Moreno: Thermal residual stress gradients in an alumina–zirconia composite obtained by electrophoretic deposition, Journal of the European Ceramic Society, 26 (2006) 553-558.   + P. Hvizdoš, D. Jonsson, M. Anglada, O. Van Der Biest, G. Anné: 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.   + MARRO, F. G. - CHINTAPALLI, R. - HVIZDOŠ, P. - SOLDERA, F. - MÜCKLICH, F. – ANGLADA, M.: Study of near surface changes in yttria doped tetragonal zirconia after low temperature degradation, International Journal of Materials Research, 100 (2009) 92-96.   + HVIZDOŠ, P. - PUCHÝ, V. - DUSZOVÁ, A. - DUSZA, J.: Tribological behavior of carbon nanofiber-zirconia composite. In Scripta Materialia, 2010, vol. 63, p. 254-257. (2.949 - IF2009). (2010 - Current Contents). ISSN 1359-6462.   + HVIZDOŠ, P. - MESTRA, A. - ANGLADA, M.: Effect of heat treatment on wear damage mechanisms in 3Y-TZP ceramics. In Wear, 2010, vol. 269, p. 26-30. (1.771 - IF2009). (2010 - Current Contents). ISSN 0043-1648.   + HVIZDOŠ, Pavol - PUCHÝ, Viktor - DUSZOVÁ, Annamária - DUSZA, Ján - BALÁZSI, Csaba. Tribological and electrical properties of ceramic matrix composites with carbon nanotubes. In Ceramics International, 2012, vol. 38, p. 5669-5676. (1.751 - IF2011). (2012 - Current Contents). ISSN 0272-8842.   + KVETKOVÁ, Lenka - DUSZOVÁ, Annamária - HVIZDOŠ, Pavol - DUSZA, Ján - KUN, Péter - BALÁZSI, Csaba. Fracture toughness and toughening mechanisms in graphene platelet reinforced Si3N4 composites. In Scripta Materialia, 2012, vol. 66, p. 793-796. (2.699 - IF2011). (2012 - Current Contents). ISSN 1359-6462.   + PUCHÝ, Viktor - HVIZDOŠ, Pavol - DUSZA, Ján - KOVÁČ, František - INAM, Fawad - REECE, Michael J. Wear resistance of Al2O3-CNT ceramic nanocomposites at room and high temperatures. In Ceramics International, 2013, vol. 39, p. 5821-5826. ISSN 0272-8842.   + DUSZOVÁ, Annamária – HALGAŠ, Radoslav – BĽANDA, Marek – HVIZDOŠ, Pavol – LOFAJ, František – DUSZA, Ján – MORGIEL, Jerzy, Nanoindentation of WC-Co hardmetals, Journal of the European Ceramic Society, 2013, vol 33., p. 2227-2232.   + HVIZDOŠ, Pavol – DUSZA, Ján – BALÁZSI, Csaba, Tribological properties of Si3N4-graphene nanocomposites. Journal of the European Ceramic Society, 2013, vol 33., p. 2359-2364.   + HVIZDOŠ, Pavol - BESTERCI, Michal - KULU, Priit - KVAČKAJ, Tibor. Tribological characteristics of copper based composites with Al2O3 particles at various temperatures. In High Temperature Materials and Processes, 2013, vol. 32, no. 5, p. 437-442. (0.252 - IF2012). (2013 - Current Contents). ISSN 0334-6455   + CHICARDI, E. - TORRES, Y. - CÓRDOBA, J.M. - HVIZDOŠ, Pavol - GOTOR, Francisco José. Effect of tantalum content on the microstructure and mechanical behavior of cermets based on (TixTa1-x)(C0.5N0.5) solid solutions. In Materials and Design, 2014, vol. 53, p. 435-444. ISSN 0261-3069   + Bľanda, M. - Duszová, A. - Csanádi, T. - Hvizdoš, P. - Lofaj, F. - Dusza, J. Indentation fatigue of WC grains in WC-Co composite. Journal of the European Ceramic Society, 2014, 34 (14), pp. 3407-3412   + Kovalčíková, A. - Balko, J. - Balázsi, C. - Hvizdoš, P. - Dusza, J. Influence of hBN content on mechanical and tribological properties of Si3N4/BN ceramic composites. Journal of the European Ceramic Society, 2014, 34 (14), pp. 3319-3328   + Balko, J. - Hvizdoš, P. - Dusza, J. - Balázsi, C. - Gamcová, J. Wear damage of Si3N4-graphene nanocomposites at room and elevated temperatures, JECS, 2014, 34 (14), pp. 3309-3317   + CSANÁDI, Tamás - BĽANDA, Marek - CHINH, Nguyen Quang - HVIZDOŠ, Pavol - DUSZA, Ján. Orientation-dependent hardness and nanoindentation-induced deformation mechanisms of WC crystals. In Acta Materialia, 2015, vol. 83, p. 397-407. (4.465 - IF2014). ISSN 1359-6454.   + BRUNCKOVÁ, Helena - MEDVECKÝ, Ľubomír - HVIZDOŠ, Pavol - ĎURIŠIN, Juraj - GIRMAN, Vladimír. Structural and mechanical properties of sol-gel prepared pyrochlore lanthanum niobates. In Journal of Materials Science, 2015, vol. 50, p. 7197-7207. (2.371 - IF2014). ISSN 0022-2461.   + HVIZDOŠ, Pavol - BALKO, Ján - CÓRDOBA, J.M. - CHICARDI, E. Nanoindentation of (Ti,Ta)(C,N)-Co cermets prepared by methods of mechanochemistry. In International Journal of Refractory Metals and Hard Materials, 2015, vol. 49, p. 219-224. (1.989 - IF2014). ISSN 0263-4368.   + FIDES, Martin - KOVALČÍKOVÁ, Alexandra - HVIZDOŠ, Pavol - BYSTRICKÝ, Roman - DŽUNDA, Róbert - BALKO, Ján - SEDLÁČEK, Jaroslav. Mechanical and tribological properties of electrically conductive SiC based cermets. In International Journal of Refractory Metals and Hard Materials, 2017, vol. 65, p. 76-82. ISSN 0263-4368.   + CHENITI, B. - MIROUD, D. - BADJI, R. - ALLOU, D. - CSANÁDI, Tamás - FIDES, Martin - HVIZDOŠ, Pavol. Effect of brazing current on microstructure and mechanical behavior of WC-Co/AISI 1020 steel TIG brazed joint. In International Journal of Refractory Metals and Hard Materials, 2017, vol. 64, p. 210-218. ISSN 0263-4368.   + FIDES, Martin - HVIZDOŠ, Pavol - BYSTRICKÝ, Roman - KOVALČÍKOVÁ, Alexandra - SEDLÁK, Richard - SEDLÁČEK, Jaroslav - DŽUNDA, Róbert. Microstructure, fracture, electrical properties and machinability of SiC-TiNbC composites. In Journal of the European Ceramic Society, 2017, vol. 37, p. 4315-4322. ISSN 0955-2219.   + LEHOCKÁ, D. - KLICHOVÁ, Dagmar - FOLDYNA, Josef - HLOCH, S. - HVIZDOŠ, Pavol - FIDES, Martin - BOTKO, František. Comparison of the influence of acoustically enhanced pulsating water jet on selected surface integrity characteristics of CW004A copper and CW614N brass. In Measurement, 2017, vol. 110, p. 230-238. ISSN 0263-2241.   + DŽUNDA, Róbert - FIDES, Martin - HNATKO, Miroslav - HVIZDOŠ, Pavol - MÚDRA, Erika - MEDVEĎ, Dávid - KOVALČÍKOVÁ, Alexandra - MILKOVIČ, Ondrej. Mechanical, physical properties and tribological behaviour of silicon carbide composites with addition of carbon nanotubes. In International Journal of Refractory Metals and Hard Materials, 2019, vol. 81, p. 272-280. ISSN 0263-4368.   ***Chapters in monographs***   * + HVIZDOŠ, Pavol - PUCHÝ, Viktor - DUSZOVÁ, Annamária - DUSZA, Ján. Carbon nanofibers reinforced matrix composites. In Nanofibers - production, properties and functional applications. Editor Tong Lin. - Rijeka : InTech, 2011, p. 241-266. ISBN 978-953-307-420-7. (25.03.2014 – chapter downloaded 5322 times).   + HVIZDOŠ, Pavol - TATARKO, Peter - DUSZOVÁ, Annamária - DUSZA, Ján. Failure mechanisms of ceramic nanocomposites. In Ceramic nanocomposites. - Cambridge : Woodhead Publishing, 2013, p. 117-152. ISBN 978-0-85709-338-7.   + HVIZDOŠ, Pavol. Wear and erosion resistant ceramic materials. In Encyclopedia of Materials: Technical ceramics and glasses. - Oxford : Elsevier, 2021, p. 416-424. ISBN 9780128185421.   + HVIZDOŠ, Pavol - VENCL, Aleksandar. Ceramic matrix composites with carbon nanophases: Development, Structure, mechanical and tribological properties and electrical conductivity. In Encyclopedia of Materials: Composites. Vol. 2. - Oxford : Elsevier, 2021, p. 116-133. ISBN 978-0-12-803581-8.11858-2.   ***Editorial activities – edited 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.  Special Issue of Journal of the European Ceramic Society, Fractography of Advanced Ceramics VI, Managing Guest Editor: Pavol Hvizdoš, JECS 2020, vol 40, No 14, ISSN 0955-2219, eISSN 1873-619X.  ***Organizer and co-organizer of international conferences:***  • Deformation and Fracture in PM Materials (1999, 2011, 2014)  • Fractography of Advanced Ceramics (2001, 2010, 2013, 2016, 2019, 2023)  • Local Mechanical Properties (2014, 2017)  • European Ceramics Society Conference 2017  • International Conf. on Science of Hard Materials 2019, 2024  • Metallography/Fractography (2019, 2022)  • Int. Conf. on Manufacturing Engineering and Materials ICMEM (2016, 2018, 2023)  • European Conference on Fracture, Symposium TC06 (2020, 2022)  ***March 2024*** | |