

## CURRICULUM VITAE

**Associate Prof. Eduard Hryha, PhD.**

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**Date of birth:** 21 July 1980  
**Nationality:** Rusyn (West Ukraine)  
**Marital status:** Married

### **Academic Summary:**

- November 2012 – Associate Professor (Docent) at the Department of Materials and Manufacturing Technology, Chalmers University of Technology, Gothenburg, Sweden. Research topic: powder metallurgy and particulate materials, surface science and advanced surface analysis techniques. Current research topics involve close collaboration with research institutions throughout the Europe as well as industry (Höganäs AB, LK AB, Linde GmbH, Timcal SA, Metec Metal Powder AB, Callo AB, AGA Gas, FJ Sintermetal, Husqvarna AB, etc.).
- June 2010 – October 2012 Assistant Professor in Advanced Manufacturing, Department of Materials and Manufacturing Technology, Chalmers University of Technology, Gothenburg, Sweden. The main focus of research work: powder metallurgy of alloyed steels, surface analysis of powder and its changes during consolidation, sintering and sintering atmospheres, etc. Research was performed in close cooperation with the companies active in the field of powder metallurgy (Höganäs AB, Metec Metal Powder AB, Callo AB, AGA Gas AB, FJ Sintermetal, Husqvarna, etc.).
- March 2010 – June 2010 Researcher at Department of Materials and Manufacturing Technology, Chalmers University of Technology, Göteborg, Sweden. Topic of the research work: “Tailoring of Sintering Process” – development of new sintering process for alloyed steels, furnace design, establishing of sintering parameters. Work is done in cooperation between Chalmers University, Höganäs AB, Callo AB, AGA Gas.

- March 2008 – March 2010 Post-doctoral researcher at Department of Materials and Manufacturing Technology, Chalmers University of Technology, Göteborg, Sweden. Topic of the research work: “**Process Mapping for Oxidation Sensitive Low-alloyed Steel Powders**”. Project is an applied research project carried out in cooperation with *Höganäs AB*, Sweden, the world leader in steel powder manufacturing, and is aimed to increase the knowledge regarding manufacturing and further processing of oxidation sensitive low-alloyed steel powders.
- March 2005 to February 2008 **PhD. Degree in Materials Engineering.** Full-time *Höganäs Chair III scholarship* – research PhD student at the Institute of Materials Research of the Slovak Academy of Sciences, Kosice, Slovakia. Research area: Powder Metallurgy. The title of the Ph.D. thesis: “**Fundamental Study of Mn Containing PM Steels with Alloying Methods of both Premix and Prealloy**” – confidential (disclosed by agreement between IMR SAS and Höganäs AB). Defended: 12-th December 2007.
- March 2005 to March 2008 Extra-mural post-graduate student at the Department of Physics of Semiconductors, Uzhgorod National University, Ukraine. Research area: Physics of Semiconductors. The title of the dissertation: “**Structure and Physical properties of amorphous ternary system Ge-Sb-S**”.
- October 2003 to March 2005 Post-graduate student at the Department of Physics of Semiconductors, Uzhgorod National University, Ukraine. Research area: Physics of Semiconductors. The title of the dissertation: “**Structure and Physical properties of amorphous ternary system Ge-Sb-S**”. Change to extra-mural study in 2005 due to poor project financing and situation at the University.
- September 1998 to June 2003 **M.Sc. in Applied Physics**, Uzhgorod National University. Awarded June, 2003. Specialization: **Physical-Technical Examination**. I received basic knowledge and practical skills in the areas of physical-chemical analysis, standardization and materials science. The title of master thesis: “*Optical activity of  $Hg_3Te_2Cl_2$  crystals*”.

### **Professional experience, courses:**

- March 2005 “Höganäs Summer School” fundamentals of PM manufacturing technology, Sweden.
- June 2006 “Design and Capabilities of PM Components and Materials” – Powder Metallurgy Training Courses, Grenoble, France;

- March 2007 “Advanced Characterisation Techniques based on Large Scale Facilities” – Integrated Post-Graduate School, Ancona, Italy.
- “Inca Energy Application” – Training Courses, Oxford Instruments Analytical Ltd., High Wycombe, United Kingdom
- April 2007
- September 2007 “Application of Neutrons and Synchrotron Radiation in Engineering Materials Science” – Training Courses, Helmholtz Research Society (DESY, GKSS and HMI), Hamburg, Germany
- October 2007 “HKL EBSD Application” – Training Courses, Oxford Instruments Analytical Ltd., Hobro, Denmark
- June 2012 “Calorimetry Summer School” – Training Courses, IRCE Lyon, Lyon, France, 10-15 June 2012
- April 2013 “ThermoCalc”, “DICTRA” – Training Courses, Thermo-Calc Software AB, Stockholm, Sweden, 15-19 April 2013

**Supervision of PhD students and post-docs:**

- R. Oro: “Development of effective carbon source for sintering of hard-metals”, (2013-2014) post-doc, supervisor;
- S. Karamchedu: “Implementation of New Processing Strategy for Manufacturing of High-performance PM Steels”, (2011-...), PhD student – co-supervisor, from 11.2012 – acting supervisor;
- C. Oikonomou: “Soft Magnetic Composite Powder Materials”; (2011-...), PhD student – co-supervisor;
- D. Chasoglou: “*Process Mapping for Oxidation Sensitive Low-alloyed Steel Powders*”, (2008-2012) PhD student, defended June 2012 – co-supervisor.

**Scientific Journals reviewer:**

- *Metallurgical and Materials Transaction A;*
- *Materials Chemistry and Physics;*
- *Powder Metallurgy;*
- *Powder Metallurgy Progress;*
- *Acta Physica Polonica A;*
- *International Journal of Modern Physics B;*
- *Acta Metallurgica Slovaca;*
- *Journal of Powder Metallurgy & Mining;*
- *High Temperature Materials and Processes.*

### Scientific commissions

*Discussion leader/opponent for the following PhD Thesis defenses:*

- 1) Petro Shykula, Institute of Materials Research of the Slovak Academy of Sciences, Košice, Slovakia. PhT Thesis topic: “*Master Alloys in Powder Metallurgy*”, 21 February 2011;
- 2) Raquel de Oro Calderon, Universidad Carlos III de Madrid, Madrid, Spain. PhT Thesis topic: “*Master Alloy Design for Sintering Mn-Si Steels*”, defended 22 March 2012.
- 3) Luz Fuentes, Universidad Carlos III de Madrid, Madrid, Spain. PhT Thesis topic: “*Development of new high strength sintered steels mechanically alloyed with Nb*”, defended 23 November 2012.

*Grading committee member:*

- 1) Ali Khatibi, Linköping University, Sweden. PhT Thesis topic: “*Growth and Heat Treatment Studies of Al-Cr-O and Al-Cr-O-N Thin Films*”, defended 12 February 2013;
- 2) Jianqiang Zhu, Linköping University, Sweden. PhT Thesis topic: “*Microstructure Evolution of Ti-based and Cr Cathodes during Arc Discharging and Its Impact on Coating Growth*”, defended 20 September 2013.

### Invited lectures:

- 1) **EPMA Powder Metallurgy Summer School 2008** (~70 PhD students/young engineers): Acqui Terme, Italy, 21-29 June 2008. Topic: “*Properties of Powders*”;
- 2) **Ruhr Universität Bochum**, Bochum, Germany, 12 January 2011. Topic: “*Surface analysis in Powder Metallurgy*”.
- 3) **VILD Seminar** - Vanadium In LD-slag (metallurgy companies, ~50 participants, 18 companies), Oxelösund, Sweden, 1-2 March 2011. Topic: “*Using XPS for Valence Determination of Vanadium in Metallurgical Slags*”.
- 4) Conference “**Deformation and Fracture in PM Materials**”, Stara Lesna, Slovakia, 6-9 November 2011. Topic: “*Changes In Oxide Chemistry During Consolidation Of Cr/Mn Water Atomized Steel Powder*”.
- 5) **PM Sintering – Fundamentals and Mass Production** – (~70 PhD students/young engineers), Helsingborg, Sweden, 18-20 March 2012. Topic: “*Debinding/delubing*”.

### Recent awards:

- **WILEY** prize for the best work presented at *14th European Conference on Applications of Surface and Interface Analysis ECASIA'11* (4–9 September 2011, Cardiff, UK) for the work: E. Hryha, L. Rutqvist, L. Nyborg: “*Stoichiometric Vanadium Oxides Studied by XPS*” (accepted to *Surface and Interface Analysis*).

**Publications:** Author of more than 60 journal articles and peer-reviewed conference papers.  
Author of more than 50 scientific reports (confidential) for industrial partners