

# Curriculum Vitae:

## RNDr. Jaromír Kopeček, Ph.D.

born 30. 9. 1971 in Frýdek-Místek, Czechoslovakia

**ORCID:** <https://orcid.org/0000-0002-9337-4639>

**ResearcherID:** G-1905-2014



**Worker of radiation category A**, 2005-2015, later B

### Education:

- 1990-1995: Master studies on Charles University in Prague, Czech Republic.

Branch of study: Solid state physics.

Diploma thesis: Phase transformation  $B2 \leftrightarrow D0_3$  in the selected binary systems.

- 1995-1999: Postgraduate studies on Charles University in Prague, Czech Republic.

Branch of study: Solid state physics and material engineering.

PhD thesis: Relation of a static and dynamic softening of  $Fe_3Al$  (and derived alloys) and the transformation process during the phase transition  $B2 \leftrightarrow D0_3$ .

### Professional experiences:

Since October 1999: Institute of Physics of the Academy of Sciences of Czech Republic

February 2002 – February 2004: Institute for Energy of JRC of DG EC, Petten. Grantholder of the category 30+.

**Language skills:** English, Russian, Czech (mother-tongue)

### Research areas:

- Materials science, microstructure of materials, relation of microstructure and (mechanical) properties
- Martensitic transformation and shape memory phenomena studies in Ni-Ti-X, Co-Ni-Al, Cu-Al-Ni
- Structural ordering, microstructure development and its relation with (mainly mechanical) properties in Fe-Al-X, Heusler alloys
- Crystal growth and crystallization processes. Single-crystals Ag, Cu, steel AISI 316L; Defined bi- and tri-crystals Fe-Si; In-situ composites Ti-Al-Si.
- Powder metallurgy (SHS, SPS), materials processing (ECAP, rotary swaging).

### Techniques:

1. Electron microscopy (SEM including EDX, WDX, EBSD, FIB, EBIC, CL, FIB, 3D techniques and preparation of samples (Zeiss DSM940, LEO S430, JEOL Microprobe JX-733, SX 50, TEM JEOL 2000FX, FIB-SEM Tescan FERA 3).
2. Optical microscopy (Zeiss AxioImager Z1m, digital microscope Keyence VHX-1000, etc.)
3. Atomic force microscopy (NT-MDT Ntegra Prima)
4. X-ray diffraction using different methods
4. Crystal growth using Bridgman and floating-zone methods

### Professional membership:

Czech and Slovak Crystallographic Association (since 2005);

European Microbeam Analysis Society (since 2009)

### **Pedagogical activity**

- Other recognized scientific member on Technical University Liberec, 3.5.2010
- Lecture: Skenovací elektronová mikroskopie a metody mikrosvazkové analýzy (2/0), Department of Solid State Engineering FNSPE CTU in Prague (KIPL FJFI ČVUT), Praha, since 2015
- Individual lecture in: *Charakterizační metody v nanotechnologiích*, FBMI CTU in Pargue, since 2013; *Moderní Měřící Metody*, - Katedra inženýrství pevných látek Department of Solid State Engineering FNSPE CTU in Prague (KIPL FJFI ČVUT),, since 2014

### **Summarized results of publication activities:**

- in impacted journals (WoS) – 139
- in non-impacted journals (WoS) – 6
- in other reviewed journals (published in Czech Republic) – 6
- contribution in proceedings (WoS) – 13

**Sum of the Times Cited according to Web of Science: 1316 (without self-citations 1241)**

**H-index according to Web of Science: 20**

### **Projects**

#### **Main Applicant**

- *The production of large monocrystals of austenitic stainless steel / Produkce velkých monokrystalů austenitických nerezových ocelí*, MŠMT ČR Program KONTAKT - mobilita 2/2006-2007, Zahraniční partner: Igor Simonovski, "Jožef Stefan" Institute, Ljubljana, Slovenia
- *Kalibrace modelu krystalové plasticity monokrystalickými vzorky / Calibration of a crystal plasticity based model using monocrystal samples*, MŠMT ČR Program KONTAKT - mobilita č. j 6039/2008-32, identifikační kód MEB 090909, 2009-2010, Zahraniční partner: Igor Simonovski, "Jožef Stefan" Institute, Ljubljana, Slovenia
- *Feromagnetické slitiny s tvarovou pamětí na bázi kobaltu /Cobalt-based ferromagnetic shape memory alloys*, GA ČR P107/10/0824, 1.1. 2010 - 31.12. 2012, 3012 t. Kč
- *Nanodvojčata, funkční vlastnosti řízené intenzivní plastickou deformací / Nanotwins, functional properties driven by intensive plastic deformation*, GA ČR 22-11949S, 1.1. 2022 – 31.12. 2024, 10 261 tis. Kč

#### **Co-Applicant**

- *Slitiny na bázi Fe - 40 at.% Al jako základ pro aplikace za vysokých teplot*, GA ČR 106/06/0019, Řešitel: Doc. RNDr. Vladimír Šíma CSc., KFM MFF UK, Praha, 2006-2008; 729 kKč
- *Mechanické vlastnosti funkčních vrstev submikronových tloušťek / Mechanical properties of functional layers of submicrom thicknesses*, GA ČR 101/09/0702, Applicant: Ing. Michal Landa, CSc., ÚT AS CR, Praha, 1.7.2009 - 30.6. 2014, 2301 kKč.
- *Fyzikální a metalurgické aspekty deformačního chování aluminidů železa s extrémně nízkou plasticitou / Physical and metallurgical aspects of deformation behaviour of iron aluminides with*

*extremely low plasticity*, GA ČR P107/10/0438, Applicant: Prof. Ing. Ivo Schindler, CSc., FMMI VŠB - TU Ostrava, 1.1. 2010 - 31.12. 2013, 620 kKč

- *Preparation of NiTi shape memory alloys by reactive sintering / Příprava slitin NiTi s tvarovou pamětí reaktivní sintrací*, GA ČR 14-03044S, Applicant: Doc. Ing. Pavel Novák Ph.D, FCHT VŠCHT v Praze, 1. 1. 2014 – 31. 12. 2016; 2,421,000 Kč
- *Zpracování inovativních intermetalik na bázi železa mechanickým legováním a slinováním v plazmatu / Processing of innovative iron-based intermetallics by mechanical alloying and spark plasma sintering*, GA ČR 17-07559S, Applicant: Ing. Filip Průša Ph.D., FCHT VŠCHT v Praze, 1. 1. 2017 – 31. 12. 2019; 2,133,000 Kč
- *Parametrická reprezentace a stochastické 3D modelování mikrostruktury zrn polykrystalických materiálů s užitím kótovaných náhodných mozaik / Parametric representation and stochastic 3D modeling of grain microstructures in polycrystalline materials using random marked tessellations*, GA ČR 17-00393J, Applicant: prof. RNDr. Viktor Beneš DrSc., KPMS MFF UK v Praze, Foreign Applicant: Prof. Dr. Volker Schmidt, Institute of Stochastics, Univ. Ulm, SRN, 1. 1. 2017 – 31. 12. 2019; 2,820,000 Kč
- *Nové metalurgické postupy pro nové „přírodní slitiny“ / New metallurgy for new „natural alloys“*, GA ČR 20-15217S, Applicant: doc. Ing. Pavel Novák Ph.D., FCHT VŠCHT v Praze, 1. 1. 2020 – 31. 12. 2022; 3,855,000 Kč