

Professional Curriculum Vitae

Personal data

Name: **Pavla Čapková**
Date and place of birth: 30.9.1945 Nový Bydžov
Address: Faculty of Science, J. E. Purkyně Univerzity, České mládeže 8
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Education:

1960-1963 High school (Gymnasium), Semily
1963 – 1968 Mgr. : Charles University Prague, Faculty of Mathematics and Physics; Study program: Solid State Physics
1970 – 1975 CSc/PhD: Charles University Prague, Faculty of Mathematics and Physics; Study program: Solid State Physics
1992 – associate professor: habilitation in solid state physics, Charles University, Faculty of Mathematics and Physics, Prague
2001 – DrSc - Doctor of science: Solid state chemistry , Charles University Prague, Faculty of Mathematics and Physics
2004 – Professor: Physics of molecular and biological structures , Charles University Prague, Faculty of Mathematics and Physics, Prague

Work experience

1974 – 1991 Assistant professor, Department of solid state physics, Faculty of Mathematics and Physics, Charles University Prague
1991 – 3 months fellowship, Faculty of Science, University of Amsterdam (prof. Henk Schenk)
1992 - 5 months fellowship, Faculty of Science, University of Amsterdam (prof. Henk Schenk)
1992 - 1996 Associate professor, Department of semiconductor physics, Faculty of Mathematics and Physics, Charles University Prague
1997 – 2004 Associate professor, Department of chemical physics, Faculty of Mathematics and Physics, Charles University Prague
2005 – Professor, Department of chemical physics, Faculty of Mathematics and Physics, Charles University Prague
1.10.2005 – 31.12.2010: Professor, director of the Institute: *Nanotechnology Centre* at the Technical University of Ostrava
1.1. 2011 - present: Professor, Vice- dean for research and external relations at the Faculty of Science, University J.E. Purkyně in Usti nad Labem.

H-index (Web of Science): **19**

No of citations (excl. autocitations): **1192**

Research results summary:

Research interests and skills...

X-ray diffraction analysis - Developing a methodology for accurate measurements of intensities in a powder diffraction and "*Ab initio*" solution of crystal structures from powder diffraction data.
Structure and properties of intercalates, nanomaterials based on intercalated and surface-modified

layered structures, especially layered silicates. Molecular modeling of nanostructures using empirical force fields. Comprehensive structural analysis of the partially disordered structures using a combination of X-ray diffraction, IR spectroscopy and molecular modeling. Photocatalytic and antibacterial nanocomposite materials. Polymeric nanostructures, nanocomposites polymer /silicate and layer silicate/graphene. The last 4 years: structure and properties of polymeric nanofiber structures and their composites.

Research projects

Following projects: • 14 project of Czech science foundation (in 4 projects as the project leader, in 8 projects as the co-investigator and in 2 projects as the team member) ; • 1 project of applied research (photocatalytic nanomaterials) granted by Czech Ministry of Industry and Trade “Tandem FT-TA4 / 025” as the co-investigator; • 1 research project of Czech Ministry of education (nanomaterials and nanotechnologies) MSM6198910016 as the co-investigator; • Grant NATO CONTACT 113-36 / 7441 as the co-investigator; • project OP PIK CZ.01.1.02/0.0/0.0/15_019/0001680 as the coordinator at UJEP, ; • project research infrastructure NanoEnvCz LM2015073, as the coordinator at UJEP

Research projects (2011 – 2015)

No	Duration	Research project name & identification; role in the research team	Grant scheme /program title	Total amount granted
1.	2011-2013	Project GAČR P10/11/1057: ”Synthesis structure and properties of nanocomposites conducting polymer/phyllsilicate” as the project leader.	Czech science foundation	389926 €
2.	2013-2015	Project GAČR 13-06989S: „Plazmo-chemical modifications of phyllosilicates for functional nanostructures” as the project leader up to 1.6. 2014, later as the team member.	Czech science foundation	294889 €
3.	2016-2022	Project LM2015073: Research infrastructure NanoEnvCz: “Nanomaterials and nanotechnologies for environment protection and sustainable future” as the project leader for UJEP, coordinator and leader of the consortium : J. Heyrovský Institute of Physical Chemistry, Czech academy of sciences .	Czech ministry of education	For UJEP 579037 €
4.	2015-2018	Projekt OP PIK Z.01.1.02/0.0/0.0/15_019/0001680 Polymeric nanofiber antibacterial filtration media.	MIT (Ministry of industry and trade)	For UJEP 73 560 €

5 relevant publications (2011 – 2015)

No	Paper	Impact factor	No of citations (excl. autocit.)
1.	Preparation and characterization of photoactive composite kaolinite/TiO ₂ ; By: Mamulova Kutlakova, K.; Tokarsky, J.; Kovar, P.; et al., JOURNAL OF HAZARDOUS MATERIALS; 188 (2011) 212-220	4,53	48
2.	A low-cost photoactive composite quartz sand/TiO ₂ ; By: Tokarsky, et al.; CHEMICAL ENGINEERING JOURNAL, Vol. 222 (2013) 488-497	4,321	14

3.	Synchrotron X-ray scattering reveals early-stage crystallinity during the self-assembly of polyaniline nanotubes with rectangular cross-sections; By: Laslau, Cosmin; Ingham, Bridget; Zujovic, Zoran D.; et al. SYNTHETIC METALS; : 161 (201) 2739-2742	2,99	13
4.	High electrical anisotropy in hydrochloric acid doped polyaniline/phyllsilicate nanocomposites: Effect of phyllsilicate matrix, synthesis pathway and pressure; By: Tokarsky, J.; Kulhankova, L.; Styskala, V.; et al.; APPLIED CLAY SCIENCE ; 80-81, (2013) 126-132	2,59	11
5.	A simple molecular modeling method for the characterization of polymeric drug carriers; By: Machackova, M., Tokarsky, J.; Capkova, P.; EUROPEAN JOURNAL OF PHARMACEUTICAL SCIENCES; Vol. 48 (2013) 316-322	3,35	10

8 most significant relevant publications*

No	Research paper/ monography	Impact factor	No of citations (excl. autocit.)
1.	Influence of DPH on the structure and dynamics of a DPPC bilayer; By: Repáková J. et al. BIOPHYSICAL JOURNAL vol 88 (2005) 3398-3410	3,972	73
2.	Distribution, orientation, and dynamics of DPH probes in DPPC bilayer ; By: Repakova, J; Capkova, P; Holopainen, JM; et al.; JOURNAL OF PHYSICAL CHEMISTRY B ; Vol. 108 (2004) 3438-13448	3,302	71
3.	Exfoliation/delamination of kaolinite by low-temperature washing of kaolinite-urea intercalates; : Valaskova, M., et al.; APPLIED CLAY SCIENCE Vo. 35 (2007) 108-118	2,467	69
4.	Structure analysis of montmorillonite intercalated with cetylpyridinium and cetyltrimethylammonium: Molecular simulations and XRD analysis; By: Pospisil, M; Capkova, P; Merinska, D; et al.; JOURNAL OF COLLOID AND Interface Science; Vol. 236 (2001) 127-131	3,368	50
5.	Preparation and characterization of photoactive composite kaolinite/TiO ₂ ; Mamulova Kutlakova, K.; Tokarsky, J.; Kovar, P.; et al.; JOURNAL OF HAZARDOUS MATERIALS Vol. 188 (2011) 212-220	4,529	48
6.	Structure analysis of intercalated layer silicates: combination of molecular simulations and experiment; By: Pospisil, M; Kalendova, A; Capkova, P; et al.; JOURNAL OF COLLOID AND INTERFACE SCIENCE; Vol.277 (2004) 154-161	3,368	39
7.	Free pyrene probes in gel and fluid membranes: Perspective through atomistic simulations; By: Curdova, J.; Capkova, P.; Plasek, .; et al.; JOURNAL OF PHYSICAL CHEMISTRY; Vol. 111	3,302	38

	(2007) 3640-3650		
8.	The Rhodamine B intercalation of montmorillonite; By: Klika, Z; Weissmannova, H; Capkova, P; et al. JOURNAL OF COLLOID AND INTERFACE SCIENCE Vol. 275 (2004) 243-250	3,368	37

Patents and collaboration with industry (2011 – 2015)

No	Year of Publication	Identification of the patent/other results and forms of collaboration with industry; Inventors.	Commercialisation/licencing (date, authorised subject)
1.	2004	Contract research: molecular modelling of new drug carriers based on cyclodextrines.	Zentiva, Czech Republic
2.	2008-2010	Contract research: molecular modelling of new drug carriers based on gel nanoparticles.	IVAX-Pharmaceuticals Czech Republic
3.	2009	The utility model: no. CZ 19743 U1 Photocatalytic composite, used by companies ČTCAP a.s. a Precheza Přerov; Authors: Pavla Čapkova, Vlastimil Matějka, Antonín Mlčoch, Lucie Neuwirthová, Pavel Kovář	Users: ČTCAP and Precheza Přerov
4.	2013	The utility model: no. 25259 Electrically conductive composite material, used by TU Ostrava; Authors: Vlastimil Matějka, Vítězslav Stýskala, Lenka Kulhánková, Jonáš Tokarský, Pavla Čapkova	-

Scientific awards

In 2010 the Award of Rector of VŠB-TU Ostrava for the results of research and development of nanomaterials

In 2013, the Award of Rector of the University J.E. Purkyně for results in science

In 2015, the Award of Rector of the University J.E. Purkyně for results in science

In 2015 Medal awarded by rector of VŠB-TU Ostrava for the lifelong work in the field of physics and chemistry of materials and significant contribution to the development of the VŠB-TU Ostrava

In 2016, the Award for contribution to the development of science in Ústí region, price awarded by the Governor of Ústí region

Other experience

Development projects: In addition to the above mentioned research projects, the management of 3 projects of Ministry of education for development of university - building and upgrade of laboratories and innovation of study programs; Czech-Saxon bilateral project "Protransfer" - a model of knowledge and technology transfer.

Building laboratories:

Foundation and building of the Laboratory of Molecular Modeling at Faculty of mathematics and physics, Charles University in Prague

Foundation and building of the laboratory of Molecular Modeling at the Nanotechnology centre, Technical University of Ostrava.

Foundation and building of the Laboratory of X-ray diffraction analysis at the Faculty of Science, J. E. Purkyně university in Ústí nad Labem.

Organization of international conferences: Fourteenth European Crystallographic Meeting ECM-14, University of Twente, Enschede, the Netherlands (during the folowship in Amsterdam), Nano-Ostrava 2008, Nano-Ostrava 2011, Nano-Ostrava 2015.

References

No	Name	Work position; employer address	Personal contacts
1.	Prof. Wiesław Lasocha	Professor: Faculty of Chemistry Jagiellonian University Crystallography Department ul. R. Ingardena 3, 30-060 Krakow ,PL	lasocha@chemia.uj.edu.pl Tel: +48-12-663 2053 Tel: +48-12-633 6377
2.	Prof. David Rafaja	Professor: Director of Institute of Materials Science Structure Research; TU Freiberg Gustav-Zeuner-Str. 5; D-09599 Freiberg	rafaja@ww.tu-freiberg.de Tel. +49-3731-39 2299 (2607)
2.	Prof. Radim Blaheta	Director of Institute of Geonics, Czech academy of sciences Studentská 1768 708 00 Ostrava-Poruba , Czech Republic	blaheta@ugn.cas.cz Tel: +420 603 450 245 Tel. +420 596 979 353 (223)
3.	Prof. Pavel Höschl	Profesor: Faculty of mathematics and Physics, Charles University Prague, Ke Karlovu 5, 12116 Prague 2, Czech Republic	hoschl@karlov.mff.cuni.cz Tel: +420 221 911 266 Tel: +420 602 660 238
4.	Prof. Miroslav Mašláň	Profesor, Vice rector, Faculty of Sciences, Palacký University Olomouc, Křížkovského 8, 771 47 Olomouc , Czech Republic	miroslav.maslan@upol.cz Tel: +420 585634301, Tel: +420 585631029

Prof. Pavla Čapková,
Ústí nad Labem, 18.5.2017