Curriculum Vitae

Name, surname, degree:	M.Sc. Vojtěch Vaněček, Ph.D.
Employer:	Institute of Physics of the Czech Academy of Sciences in Prague, Na Slovance 1999/2, 182 00 Prague 8
Employment position:	Postdoc at the Department of Optical Materials, Division of solid-state physics. Group of thermal analysis and preparation of optical materials.
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***h*-index (according to SCOPUS)**	12
Higher Education:	
2012-2018	Bachelor's and Master's degree at Czech Technical University in Prague, Faculty of nuclear sciences and physical engineering, Department of Nuclear Chemistry. Bachelor and Master programme: Applications of Natural Sciences – Nuclear chemistry.
2018-2022	Ph.D. degree at Czech Technical University in Prague, Faculty of nuclear sciences and physical engineering, Department of Nuclear Chemistry. Ph.D. programme: Applications of Natural Sciences – Nuclear chemistry. Dissertation title: "Combinatorial development of scintillators based on complex halides".
Work experience:	
2016-2020	Czech Technical University in Prague, Faculty of nuclear sciences and physical engineering, Department of Nuclear Chemistry. Research assistant.
since 2018	Department of optical materials, Division of solid-state physics, Institute of Physics of the Czech Academy of Sciences in Prague. Ph.D. fellow, from 2024 postdoc.
2023-2024	Postdoctoral fellowship at Institute for Materials Research, Tohoku University (Japan).
Scientific interest:	Single crystal growth, X-ray diffraction, luminescence, scintillators.
Language skills:	English C1, Russian A2, Czech (mother tongue)

Awards and commendations:

Programme to support prospective human resources AVCR 2025/2026	Two-year financial support for outstanding postdoctoral researchers awarded by Czech Academy of sciences
Milan Odehnal price 2021/2022	1st place in the competition of scientific works of young physicists organized by the JČMF. Invited lecture "Research and development of halide scintillators" at the 20th Congress of the JČMF

Project team member:

Finished (till 31/8/2024)	TACR project No. 17-09933S
	European project H2020 ASCIMAT No. 690599
	GACR project No. 18-17555Y
	TACR project GAMA2 no. TP01010035
	MSMT Project No. SOLID21 CZ.02.1.01/0.0/0.0/16_019/0000760
	TACR project No. FW01010218
Current (till 31/8/2024)	GACR project No. 20-12885S
	GACR project No. 21-17731S
	TACR project No. FW03010298
	TACR project No. FW06010047
	European project H2020 ID2PPAC
	European project UNICORN, HORIZON-EIC-2022-PATHFINDEROPEN-01

Participation at international conferences:

September 16 – 20, 2024	Oral presentation “Rare earth luminescence in ternary fluorides: role of crystal field splitting”, 85th autumn JSAP meeting, Niigata, Japan
July 8 – 12, 2024	Oral presentation “Cross-luminescence in cesium-based ternary fluorides”, SCINT 2024, Milan, Italy

June 24 – 26, 2024	Oral presentation "Flux Growth of Cs1-xRbxBF3 (B = Ca, Sr) Crystals Using the Micro-Pulling-Down Method", CGCT9, Jeju, Korea
March 21 – 25, 2024	Oral presentation "Flux growth of fluoride single crystals using the micro-pulling-down method", 71st spring JSAP meeting, Tokyo, Japan
July 30 – August 4, 2023	Oral presentation „Crystal growth and characterization of $Cs_4Mg_3F_{10}$ prepared by the micro-pulling-down method", ICCGE-20, Naples, Italy
September 12-17, 2021	Oral presentation „Novel cross-luminescence scintillators: an exploration of $CsMCl_3$ perovskite matrix", LUMDETR 2021, Bydgoszcz, Poland
March 1-4, 2020	Oral presentation „Influence of Tl doping on scintillating properties of Cs_2HfCl_6", The 8th Asian Conference on Crystal Growth and Crystal Technology, Online
June 9-14, 2019	Oral presentation „Luminescence properties of Cs_2HfCl_6 single crystals and its temperature dependence", IS-OM8 2019, Wroclaw, Poland
March 17-21, 2019	Oral presentation "Modification of micro-pulling-down apparatus for crystal growth of cesium hafnium chloride by Bridgman method", GPCCG3, Poznań, Poland
September 9-14, 2018	Poster „ Growth of Cs_2HfCl_6 single crystal by vertical Bridgman method and characterization of its optical and luminescence properties ", LUMDETR 2018, Prague, Czech Republic

Participation at schools and workshops:

November 2, 2022	SPARTE Summer school, CTU, Prague, Czech Republic
September 8-9, 2018	Summer school on scintillation, dosimetric and phosphor materials, Prague, Czech Republic
June 14, 2018	COST FAST meeting and Ascimat workshop. Contribution: oral presentation, Online.
April 12-13, 2018	ASCIMAT workshop - From fundamental physics towards applications. Prague, Czech Republic
July 2-22, 2017	2017 Student Practice in Joint Institute for Nuclear Research, Dubna, Russian Federation

Study and scientific internships:

November 2023 – November 2024	JSPS fellowship, Institute for Materials Research, Tohoku University, Sendai, Japan
June 21 – 27, 2023	Deutsches Elektronen-Synchrotron DESY, Německo
November 8-December 5, 2022	Institute for Materials Research, Tohoku university, Sendai, Japan
April 1-11, 2022	Deutsches Elektronen-Synchrotron DESY, Germany
June 15-27, 2019	Shanghai Institute Of Ceramics Chinese Academy Of Sciences, China
October 14-30, 2018	Institut Lumière Matière, Université Claude Bernard Lyon 1, France
October 1-14, 2018	Organisation Européenne pour la Recherche Nucléaire, Switzerland
April 15-27, 2018	Institut Lumière Matière, Université Claude Bernard Lyon 1, France

List of publications

[1–25]

[1] GSAG:Ce scintillator: insights from yttrium admixture - RSC Advances (RSC Publishing) DOI:10.1039/D4RA07622B, (n.d.). https://pubs.rsc.org/en/content/articlehtml/2025/ra/d4ra07622b (accessed February 11, 2025).

[2] V. Vaněček, R. Král, K. Kateřina, R. Kučerková, V. Babin, P. Zemenová, J. Rohlíček, Z. Málková, T. Jurkovičová, M. Nikl, Li2MnCl4 single crystal: a new candidate for a red-emitting neutron scintillator, Mater. Adv. 5 (2024) 8199–8207. https://doi.org/10.1039/D4MA00697F.

[3] V. Vaněček, T. Horiai, M. Yoshino, A. Yamaji, A. Yoshikawa, M. Nikl, Flux growth of Cs1-xRbxBF3 (B = Ca, Sr) crystals by the micro-pulling-down method, Journal of Crystal Growth 649 (2025) 127919. https://doi.org/10.1016/j.jcrysgro.2024.127919.

[4] V. Vaněček, V. Jarý, R. Král, L. Havlák, A. Vlk, R. Kučerková, P. Průša, J. Bárta, M. Nikl, Growth and Spectroscopic Properties of Pr3+ Doped Lu2S3 Single Crystals, Crystal Growth & Design 24 (2024) 4736–4742. https://doi.org/10.1021/acs.cgd.4c00330.

[5] F. Hájek, V. Jarý, V. Babin, V. Vaněček, T. Hubáček, A. Hospodková, F. Dominec, T. Košutová, Response of InGaN/GaN multiple quantum well structure to UV-C and vacuum UV optical excitation, Journal of Luminescence 269 (2024) 120463. https://doi.org/10.1016/j.jlumin.2024.120463.

[6] V. Vaněček, J. Pejchal, R. Král, R. Kučerková, V. Babin, Z. Málková, T. Jurkovičová, T. Horiai, A. Yamaji, Y. Yokota, A. Yoshikawa, M. Nikl, Scintillation properties of Cs4Mg3F10 crystal grown by micro-pulling-down method, Journal of Crystal Growth 629 (2024) 127568. https://doi.org/10.1016/j.jcrysgro.2024.127568.

[7] K. Bartosiewicz, J. Pejchal, R. Kucerkova, A. Beitlerova, V. Babin, V. Vanecek, S. Kurosawa, K. Kamada, A. Yoshikawa, Advances in Ce3+ doped Y1±xAlO3 (x≠0) single crystal perovskite scintillators through nonstoichiometric engineering, Optical Materials: X 22 (2024) 100295. https://doi.org/10.1016/j.omx.2024.100295.

[8] O. Zapadlík, J. Pejchal, F. Levchenko, R. Kučerková, A. Beitlerová, V. Vaněček, K. Jurek, M. Nikl, The Ga-admixed GSAG:Ce single crystal scintillator: Composition tuning, Journal of Luminescence 263 (2023) 119984. https://doi.org/10.1016/j.jlumin.2023.119984.

[9] X. Wen, P. Prusa, L. Vladimir, T. Parkman, V. Vanecek, D. Panek, M. Nikl, S. Cheng, Q. Wang, G. Ren, Y. Wu, Near-Infrared Emitting of Zero-Dimensional Europium(II) Halide Scintillators: Energy Transfer Engineering via Sm2+ Doping, ACS Appl. Electron. Mater. 5 (2023) 3507–3514. https://doi.org/10.1021/acsaelm.3c00534.

[10] V. Vaněček, K. Děcká, E. Mihóková, V. Čuba, R. Král, M. Nikl, Advanced Halide Scintillators: From the Bulk to Nano, Advanced Photonics Research 3 (2022) 2200011. https://doi.org/10.1002/adpr.202200011.

[11] J. Pejchal, V. Babin, M. Buryi, V. Laguta, F. Hájek, J. Páterek, L. Procházková-Prouzová, L. Havlák, V. Czerneková, V. Vaněček, V. Doležal, J. Havlíček, K. Rubešová, P. Zemenová, A. Falvey, R. Král, V. Pankratov, K. Chernenko, Untangling the controversy on Ce3+ luminescence in LaAlO3 crystals, Mater. Adv. 3 (2022) 3500–3512. https://doi.org/10.1039/D1MA01083B.

[12] M. Pokorný, V. Babin, A. Beitlerová, K. Jurek, J. Polák, J. Houžvička, D. Pánek, T. Parkman, V. Vaněček, M. Nikl, Gd-admixed (Lu, Gd) AlO3 single crystals: breakthrough in heavy perovskite scintillators, NPG Asia Materials 13 (2021) 66.

[13] V. Vaněček, J. Páterek, R. Král, R. Kučerková, V. Babin, J. Rohlíček, R. Cala', N. Kratochwil, E. Auffray, M. Nikl, (INVITED) Ultraviolet cross-luminescence in ternary

chlorides of alkali and alkaline-earth metals, Optical Materials: X 12 (2021) 100103. https://doi.org/10.1016/j.omx.2021.100103.
[14] V. Vaněček, J. Páterek, R. Král, M. Buryi, V. Babin, K. Zlouženová, S. Kodama, S. Kurosawa, Y. Yokota, A. Yoshikawa, M. Nikl, Cs2HfCl6 doped with Zr: Influence of tetravalent substitution on scintillation properties, Journal of Crystal Growth 573 (2021) 126307. https://doi.org/10.1016/j.jcrysgro.2021.126307.
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[18] M. Buryi, V. Babin, R.A.M. Ligthart, S.S. Nagorny, V.B. Mikhailik, V. Vaněček, L.P. Prochazková, R. Kandel, V.V. Nahorna, P. Wang, Correlation of emission, scintillation and charge trapping properties in Cs2HfCl6 and Cs2ZrCl6 single crystals, J. Mater. Chem. C 9 (2021) 2955–2968. https://doi.org/10.1039/D0TC05482H.
[19] M. Buryi, Z. Remeš, V. Babin, V. Vaněček, K.A. Dragounová, J. Mičová, L. Landová, R. Kučerková, ZnO nanorods alloyed with Mo/Er. The effect of post-deposition treatment on defect states and luminescence, in: IOP Publishing, 2021: p. 012002.
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