Habilitation Board Decision on the Nomination for Appointment to Associate Professor

Masaryk University	
Faculty	Faculty of Science
Procedure field	Physics of Plasma
Applicant	Mgr. Jan Čech, Ph.D.
Applicant's home unit, institution	Faculty of Science, Masaryk University
Habilitation thesis	Development of Non-thermal Plasma Sources for Fast Plasma Treatment of Materials: Diagnostics and Applications

Board members

Chair	prof. Mgr. Vít Kudrle, Ph.D. *Faculty of Science, Masaryk University*
Members	doc. Mgr. Dušan Kováčik, PhD. *Faculty of Science, Masaryk University* prof. RNDr. Vladimír Aubrecht, CSc. *Faculty of Electrical Engineering and Communication Technologies, Brno University of Technology* doc. Ing. Pavel Baroch, Ph.D. *Západočeská univerzita v Plzni* prof. Jan Benedikt, Ph.D. *Christian-Albrechts-Universität zu Kiel Mathematisch-Naturwissenschaftliche Fakultät*

Evaluation of the applicant's scholarly/artistic qualifications

The whole career of Dr. J. Čech has been dedicated to plasma physics – he studied plasma physics at Masaryk University (Bachelor 2004, Master 2006, Ph.D. 2013) and he is actively working in this field since that.

The titles of his Master and Ph.D. theses show, that during his first years as a researcher, he was focused mostly on dielectric barrier discharges. Till 2020 he published 29 papers (according to Web of Science), which deal with dielectric barrier discharges and their applications.

Since 2020 he has become interested in plasma-liquid interactions and has participated in research and development of CaviPlasma technology. The scientific results can be found in 5 most recent WOS and Scopus indexed papers of Dr. J. Čech.

In total, he has 34 papers in WOS and Scopus journal databases, and more than 30 contributions in conference proceedings. Obvious trend in Dr. J. Čech publications record is the increasing push towards best quartile journals.

During his career he has collaborated with many national and international universities and research institutions. Due to that and his publication track record, he is well known in research community. According to WOS and Scopus, his papers were cited more than 480 times.

Besides the fundamental science, Dr. J. Čech has always sought applications for his research. He has collaborated with several companies to develop commercial plasma technologies. The importance and quality of his applied research are evidenced by the Best project of Czech Technological Agency 2024 prize and awarding of EU patent to CaviPlasma technology. In total, Dr. J. Čech has co-authored 3 national and 1 EU patent. One of them has already been commercially licensed to 2 interested companies.

Dr. J. Čech has participated in 11 scholarly projects, in one of these as a principal investigator. Moreover, he fully managed large Operational programme project.

Conclusion: The applicant's scholarly/artistic capabilities **meet** the requirements expected of applicants participating in a habilitation appointment procedure in the field of Physics of Plasma.

Evaluation of the applicant's pedagogical experience

Dr. J. Čech has been participating in education practically since his studies (first course taught was in 2007). Besides his research position at MUNI Faculty of Science, he is employed at MUNI Faculty of Education, where he prepares future teachers of Physics at primary and secondary schools. In total he has taught around 70 course-semesters, which is quite commendable in itself, and even more so for a hard-working researcher.

Complementing research and education, Dr. J. Čech successfully supervised 9 Bachelor theses and 7 Master theses.

His teaching abilities are of the highest standard, as evidenced by 2024/25 Faculty of Education Dean's award for long term and outstanding results in science, research and education.

Conclusion: The applicant's pedagogical capabilities **meet** the requirements expected of applicants participating in a habilitation appointment procedure in the field of Physics of Plasma.

Habilitation thesis evaluation

All three reviewers highly appraise the habilitation thesis of Dr. J. Čech and the publications commented there. According to them, the thesis is well readable and educational, while the papers cover both fundamental science and applications. They mention that the author is well known and respected within the plasma physics community. The reviewers also appreciate the patenting activity of Dr. J. Čech, especially the EU patent.

All three reviewers fully support granting Dr. J. Čech the title docent – associate professor.

Conclusion: The applicant's habilitation thesis **meets** the requirements expected of habilitation theses in the field of Physics of Plasma.

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Secret vote results

Voting took place: electronically

Number of board members		5
Number of votes cast		5
of which	in favour	5
	against	0

Board decision

Based on the outcome of the secret vote and following an evaluation of the applicant's scholarly or artistic qualifications, pedagogical experience and habilitation thesis, the board hereby submits a proposal to the Scientific Board of the Faculty of Science of Masaryk University to **appoint the applicant associate professor** of Physics of Plasma.

In Brno on 18.11.2025

prof. Mgr. Vít Kudrle, Ph.D.