Habilitation Board Decision on the Nomination for Appointment to Associate Professor

Masaryk University	
Faculty	Faculty of Science
Procedure field	Analytical Biochemistry
Applicant	Mgr. Danuše Tarkowská, Ph.D.
Applicant's home unit, institution	Institute of Experimental Botany of the Czech Academy of Sciences
Habilitation thesis	Trace and ultra-trace analysis of natural substances of terpenoid character
Board members	
Chair	prof. RNDr. Zdeněk Glatz, CSc. *Faculty of Science, Masaryk University*
Members	prof. Mgr. Tomáš Kašparovský, Ph.D. *Faculty of Science, Masaryk University* prof. RNDr. Juraj Ševčík, Ph.D. *Department of Analytical Chemistry, Palacký University Olomouc* RNDr. Pavel Kubáň, DSc. *Department of Electromigration Methods, Institute of Analytical Chemistry, Czech Academy of Sciences* Prof. András Guttman, PhD. *University of Pannonia, Hungary; Horváth Laboratory of Bioseparation Sciences, University of Debrecen, Hungary*

Evaluation of the applicant's scholarly/artistic qualifications

Danuše Tarkowská completed her MSc. study of Analytical chemistry graduating with the thesis “Voltammetric behaviour and determination of some cytokinins” in 1998 and PhD study of Biology with the thesis “Metabolism of aromatic cytokinins” in 2002, both at the Faculty of Science, Palacký University Olomouc. During and after her studies, she attended a 10-month doctoral internship at Department of Forest Genetics and Plant Physiology, Swedish University of Agriculture in Umeå, and a 12-month post-doctoral internship at Umeå Plant Science Center (Sweden).

After finishing her studies, she began the career in 2002 at the Institute of Experimental Botany Czech Academy of Sciences, and in 2012 (part-time job) at the Laboratory of Growth Regulators – joint laboratory of UPOL and the Institute of Experimental Botany Czech Academy of Sciences, just after its formation, where her research was primarily focused on plant regulation processes.

In this research field, Dr. Tarkowská cooperates intensively with many foreign institutions – Technion-Israel Institute of Technology; Royal Holloway University of London; Gregor Mendel Institute for Molecular Plant Biology, Vienna; and Norwegian University of Life Sciences, in addition to two Czech institutions - Charles University, Faculty of Science, Department of Genetics and Microbiology; and Brno University of Technology, Faculty of Chemistry, Department of Applied Chemistry.

During the last decade, Dr. Tarkowská has participated in the implementation of a number of basic and applied research projects. Namely, one research project The role of plant hormones in plant development and stress signalling, the project AKTION Österreich – Tschechische Republik ‚Wissenschafts- und Erziehungskooperation that she led as principal investigator from Czech side; and two others: New analytical approaches for the determination of phytohormones and Gibberellin biosynthesis and signal targets for plant growth regulation, both from Czech Science Foundation, in which she was a co-principal investigator for UPOL. As a member of the research team, she also participated in the implementation of 11 other projects.

Her scientific performance is well documented by 104 publications registered in the Web of Science database in journals ranked mostly in the Q1 or Q2 quartile, of which she is the first or corresponding author in 25 % cases. These works have been cited 3956 (excluding self-citations) with h-index 33 (WoS 29.2.2024), which clearly demonstrates relevance and impact of her research. In addition, she is a co-holder of one national patent.

In 2014, Dr. Tarkowská has been awarded with the Award for Excellence in Science – category “Best publication” by director of Centre “Hana”.

The board thus can undoubtedly conclude that Dr. Tarkowská is an established scientist with adequate scientific performance for appointment as an associate professor.

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

Evaluation of the applicant's pedagogical experience

Dr. Tarkowská started her teaching activities after her involvement in the Laboratory of Plant Regulator, being part of UPOL, in 2012. Consecutively, her involvement in pedagogical activities increased. Currently, she is involved in lectures at the master level – Experimental methods of chemistry 1 and 2; Isolation and purification methods; and Bioanalytics, and corresponding seminars and laboratory courses. She has supervised four successfully defended bachelor's and six master's theses, and one doctoral thesis.

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Moreover, Dr. Tarkowská showed her pedagogical skills during her public lecture, receiving highly positive assessments from both the habilitation board members – selected evaluators: prof. Tomáš Kašparovský, Dr. Pavel Kubáň, and prof. Zdeněk Glatz, and from the audience.

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

Habilitation thesis evaluation

The habilitation thesis (320 pages including publications as supplements) represents a comprehensive set of 16 scientific publications – 4 review and 12 research articles introduced by a short overview of plant hormones especially terpenoids. The reviews and research papers were published in high-impact (Q1 or Q2), international, peer-reviewed journals with relatively high impact factors in the fields of plant science (Planta, Nature Plants, Plant Physiology, Environmental and Experimental Botany), or analytical chemistry (Talanta, Analytical and Bioanalytical Chemistry) with Dr. Tarkowská being corresponding/first author in seven of them. They cover the results of her scientific research activity oriented on the modern separation and detection methods for quantitatively analyses of biologically important substances in tissues of plant origin in the period 2013–2023.

The thesis was reviewed by three independent opponents: Dr. Vaclav Kašička (Institute of Organic Chemistry and Biochemistry of the Czech Academy of Sciences, Prague), associate prof. Jan Lochman (Department of Biochemistry, Faculty of Science, Masaryk university, Brno) and prof. Ivan Mikšík (Department of Analytical Chemistry, University of Chemistry and Technology Prague, and Department of Analytical Chemistry, Faculty of Chemical Technology, University of Pardubice), who are internationally recognized experts in the field of bioanalytical chemistry (VK and IM) and plant biochemistry (JL). All three reviewers evaluated the habilitation thesis very positively, although a few points of criticisms were mentioned as well. The habilitation board members share their opinion and rank the thesis among those having a high scientific standard.

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

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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 Analytical Biochemistry.

In Brno on 08.03.2024

prof. RNDr. Zdeněk Glatz, CSc. .....

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