MATERIALS SCIENCE & ENGINEERING

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Letter of recommendation for Dr.David Lukáš

With my great enthusiasm, I support the application of Professor RNDr. David LUKÁŠ, Ph.D., for Biophysics professorship at Palacký University of Olomouc.

I graduated from the Department of Mechanics and Mathematics at Kazan State University (KSU) in former Soviet Union in 1988. From 1988 until 1990, I was working at the Institute of Mechanics and Mathematics at KSU. In 1990 I was invited to join the Institute for Problems in Mechanics in Moscow. In 2000, I joined the Textile Research Institute in Princeton, NJ. In August of 2006, I joined the Department of Materials Science and Engineering in Clemson University, SC. Clemson University is ranked as the 24th best National public university by U.S.News & World Report and is the R1: Doctoral Universities – Very high research activity, according to the **Carnegie Classification of Institutions of Higher Education.**

I have published more than 200 peer reviewed papers (h-index 32, 3175 citations, https://scholar.google.com/citations?hl=en&user=JHHHHbYAAAAJ&view_op=list_works&sortby=pubdate)
and 1 monograph. I am running the Arthropod Inspired Materials and Surfaces lab (AIMS-Lab). The lab is focused on natural and synthetic multifunctional fibers that constitute the basis of all living systems, including plant cell walls, arthropod cuticles, moth cocoon, eye cornea, tissue, and bone.

I first met Dr. Lukáš at the Fiber Society meeting in 2008, and since then I follow his research. As a 2016 Fiber Society President, I engaged Dr. Lukáš in the Fiber Society activity, he was elected to the Governing Counsil of the Society and served there for 2 years.

Dr. Lukáš is the Fulbright Scholar

In 2009-2010, I hosted Dr. Lukáš at Clemson as a recipient of the prestigious Fulbright Scholar Award, Advanced Research and University Lecturing Award in the United States. His interests in electrospinning and nanofibrous materials for tissue engineering nicely matched the lab activity. We have found many common points of interest and mutually enriched our groups with new knowledge and expertise. This one year stay resulted in: (a) Patent number US 9383292, Flexible fiber-based micro and nanofluidics for probing liquids. The patent proposed a fluidic probe comprising a nanofiber yarns having nano-pores in the fiber bodies.

(b) Article published in Nanoscale: Tsai, CC *et Al.*, Nanoporous artificial proboscis for probing minute amount of liquids, NANOSCALE, 3(11), 4685-4695, 2011, DOI: 10.1039/c1nr10773a. The paper was selected for presentation as a short news item that appeared on the website of the Royal Society of Chemistry's journal "Chemistry World": https://www.chemistryworld.com/news/probes-inspired-by-butterflies/3003294.article. Dr. Joshua Edel, a nanobiotechnology expert from Imperial College London, commented on the paper on the Chemistry World website: 'They are one of the first groups to develop nanoporous flexible probes that work as artificial proboscises. Assuming they can be made in a reproducible manner, I see no reason why this system would not have commercial implications.'

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Accomplishments as a scholar and the candidate's potential for future excellence in the field

Dr. D. Lukáš education in the field of biophysics enables him to look at the problems of nanofibrous materials from a unique and highly valuable angle. He was actively engaged in the academic life at Clemson, took classes and the lab from the Department of BioEngineering to educate himself and the students he brought in with him. These courses and labs enabled him to develop a new direction of his research at TECHNICAL UNIVERSITY OF LIBEREC. When I visited him in 2014, I was impressed by the progress he made in establishing this biomed engineering lab concentrated on the development of nanofibrous materials for biomedical applications. Since then, Dr. Lukáš made a big leap forward by implementing the lab prototypes into industrial products. With this new Professorship in Biophysics, I would expect him to progress even further in establishing a strong connection of biophysics with the engineering realm. He is an Internationally recognized scientist in the fiber engineering field and I confident that with a new position, he will bring visibility to your University.

Comment on elements of the candidate's teaching

I had the opportunity to learn about Dr. Lukáš' research work during his Fulbright stay at Clemson. He presented his research and gave invited lectures in our Materials Science and Engineering Department. I invited Dr. Lukáš's to stay for 3 month in 2015, he also gave few lectures to our graduate students. Dr. Lukáš's is an excellent experimentalist and mentor: within a few months, together with his then PhD student P. Mikes, he designed and implemented the laboratory production of nanoporous flexible probes that function as artificial butterfly proboscises. In the period of 2010-2018, Dr. Lukáš' managed to sent his students to Clemson for a couple of month to gain new experience. This commitment to education of new generation of scientists and engineers is honourable.

Thus, without reservation, I strongly recommend Dr. Lukáš' for this Professorship.

Sincerely yours,

Dr. Konstantin G.Kornev,
Professor
http://www.clemson.edu/cecas/departments/mse/people/faculty/kornev.html
https://cecas.clemson.edu/kornevlab/