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AT CHICAGO**

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Prof. Ing. Miroslav Fikar, DrSc.
Chief of Commission in Process Control
Faculty of Chemical and Food Technology
Slovak University of Technology in Bratislava
Radlinskeho 9
812 37 Bratislava
Slovak Republic

Subject: Letter of Recommendation for Associate Professor (Doc.) Ivo Petras

Dear Prof. Fikar:

It is with great pleasure that I recommend Associate Professor Ivo Petras to you for the degree of Doctor of Science (DrSc). I have known Ivo for almost ten years, beginning with my stay in Kosice (2005 - 2006) at the Technical University of Kosice as a visiting scholar under the Fulbright International Fellowship Program. Since then, I have followed Ivo's career through his papers, books and presentations at international meetings. We have talked many times about how to apply fractional calculus to control problems in biomechanics and pharmacokinetics, and I have used some of his elegant modeling software to solve problems in bioengineering and biomedical imaging. We have only – officially – collaborated on one or two short papers, so I believe that I can provide an objective assessment of his productivity and professional skills, both of which are important when considering his qualifications for the DrSc.

Although he is relatively young, Ivo has already established an outstanding record of productivity and leadership. Google Scholar lists 93 peer-reviewed publications with an h-index of 22 and 1596 citations. It should also be noted that this record of success has been growing steadily since 2005. This work spans a wide range of theory and applications (fractional order controllers, stability of nonlinear systems and chaos), and involves highly recognized Slovak as well as international scholars (e.g., Igor Podlubny (TUKE), Blas M. Vinagre (Spain), and YanQuan Chen (USA)).

This productivity is remarkable as it takes place in the context of Ivo's work as the Director of the Institute of Control and Informatization of Production Processes in the faculty (BERG) at the TUKE. It is also noteworthy that Ivo recognizes the importance of transmitting his finding to the widest possible audience through monographs and textbooks. In particular, I note his 2011 Springer book Fractional-Order Nonlinear Systems: Modeling, Analysis and Simulation, which is on my bookshelf. I have found his techniques for numerically modeling non-linear, fractional order differential equations to be very useful in solving relaxation problem in magnetic resonance imaging, for example. Here, as with much of his work, the technical results are disseminated most effectively through his MATLAB File Exchange.

In engineering (and education), doing is important, but most important is working to ensure that others can also do it. In his technical publications and his widely used software, Ivo is shining a very bright light on the path of progress. This illuminating behavior was on display last year at the 13 International Carpathian Control Conference in the High Tatras. At this meeting I was able to closely observe Ivo while he carried out his duties as Publication Chairman for the Technical Program. He was, to say the least, almost everywhere at once: introducing speakers, moderating sessions, presenting papers and judging the best paper competition. Clearly, he is a great asset to Slovakia, his institution (TUKE) and his faculty (BERG).

In summary, I think Associate Professor Ivo Petras exemplifies all of the characteristics of academic and professional leadership that the DrSc degree implies and I highly recommend him for this mark of distinction with no reservations.

Sincerely,



Richard L, Magin, Ph.D.
UIC Distinguished Professor of Bioengineering