



DEPARTAMENTO DE FÍSICA
DE LA MATERIA CONDENSADA

Letter of Recommendation

to support international recognition of candidate for the degree professor

Name of candidate:

Assoc. prof. RNDr. Adriana Zeleňáková, DrSc.

Professional relationship with candidate:

I have known Assoc. prof. Zeleňáková since 2015, when we started discussing about common scientific interests, mainly including magnetic nanoparticles and their applications for magnetocaloric applications. In addition to meeting at different international conferences and during my visits to the Institute of Experimental Physics in Kosice, I also hosted one of her students in my labs for one month, which led to the publication of four joint papers.

Scientific focus of candidate:

Scientific Profiling: Assoc. Prof. RNDr. Adriana Zeleňáková, DrSc., focuses on preparing and studying the structures and physical properties of advanced nanoparticle systems, with a particular focus on nanoparticle magnetism and relaxation processes.

Quantity and quality of publications of candidate:

She published the results of his work in 85 original scientific papers registered in WoS Core Collection database, such as: Scientific Report, Applied Surface Sciences, Physical Review B, Applied Physics Letters and others.

The quality of the applicant's published outputs is documented by more than 40 publications that are in the WoS database with quartile Q1 or Q2.

Citation rate of candidate:

As of 21 July 2025, the published scientific works of Adriana Zeleňáková, a candidate for the degree professor, have received 857 citations (excluding self-citations) in the WoS database. Her h-index is H=18.

Participation of candidate in international projects:

During the last 5 years of her activity, she has participated as Principal Investigator in 2 domestic VEGA and 2 domestic APVV projects, as well as a project from the EU Structural Funds under the OP II call - 313011AUW7 Nanoparticles for solving diagnostic and therapeutic problems with COVID 19 (NANOVIR). In addition, since 1997 she has been a co-investigator of 14 domestic VEGA projects, 12 domestic APVV projects, and 8 projects from structural funds within ERDF EU calls and other projects.

She regularly participates in foreign experiments at so-called large-scale facilities in France (ESRF Grenoble, ILL Grenoble, SOLEIL Paris), England (ISIS Oxford) and Russia (JINR Dubna), being successful in obtaining projects for measurements using synchrotron and neutron scattering.

It also regularly bids for projects in the Horizon Europe call in a consortium of international partners.

International recognition of candidate:

The recognition of the applicant's scientific community is evidenced by invited lectures at major international symposia, invited lectures at domestic conferences with international participation, as well as other lectures at international and domestic conferences. They have also engaged in extensive international cooperation and review activity for major foreign scientific journals.

Contribution of candidate:

The publication record of Adriana Zeleňáková clearly shows that she is a scientist who achieves high-quality scientific results on an international level and has made significant and original contributions to scientific research in the field of magnetic nanoparticles for practical applications. This is supported by the awards that she has received during her career, including the Prize by the Ministry of Education, related to her research, and the Prize by Dean of Faculty of Sciences, UPJS, related to her teaching performance. She has also taken leadership roles in the organization of scientific symposia. Her performance is significant and competitive at an international level, as shown by the level of citations of her work and her h-index.

Adriana Zeleňáková, a candidate for the degree of professor, is the founder of a new scientific school at the Institute of Physics UPJŠ in the field of physics of nanotechnology and nanoparticle magnetism. New

arrangements containing selected types of nanoparticles have been proposed to optimize their magnetocaloric response. The study of hyperthermia in various nanoparticles has provided new insights into their optimal composition for medical applications.

Recommendation:

Consequently, I have no reservations in recommending that Assoc. prof. Zeleňáková being awarded the degree Professor.

Name of international advisor (referee):

Prof. Dr. Victorino Franco

IEEE Fellow

Director of the Multidisciplinary Unit for Energy Science

Dpto. Física de la Materia Condensada

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Signed in Seville, on 23 July 2025

Prof. Dr. Victorino Franco

