

REVIEW

of scientific and pedagogical activities of dr hab. inż. Elżbieta Szychta for the purpose of procedure for university professor designation

On the base of letter of appointment written by the Dean of the Faculty of Electrical Engineering, University of Žilina, prof. ing. Milan Dado, PhD., No. KOR/12791/2012 from 4th December 2012, designating me a reviewer, I am submitting the review of scientific and pedagogical activities of dr hab. inż. Elżbieta Szychta for the purpose of procedure for university professor designation.

To elaborate the review I was given the following documents:

- Curriculum vitae of an applicant under review,
- Fulfilment of criteria for designation of professors,
- Survey of publication activities and obtained results,
- List of publications,
- List of most important scientific and professional works,
- Topic of inauguration lecture.

Dr hab. inż. Elżbieta Szychta was born in 1958. She completed her engineering studies in 1981, gaining the doctor's degree at the Warsaw University of Technology in 1988, and doctor habilitatus degree at the Faculty of Electrical Engineering, University of Žilina in 2007. She is currently a tenured Associate Professor at the Faculty of Transport and Electrical Engineering, Kazimierz Pulaski University of Technology and Humanities in Radom.

1. Scientific activity

Dr hab. inż. Elżbieta Szychta has authored 1 monograph, 53 scientific articles in national and international science papers, 69 articles in materials of national scientific conferences and 22 in foreign conference materials. Her 16 articles are registered in the database Web of Knowledge Thomson Reuters. Her works have been cited 22 times in the database Web of Knowledge Thomson Reuters.

Her research focuses around analysis of properties and methods of designing energy-efficient power supply systems for industry and transport and automation of industrial processes. The application of high-frequency induction heating to transportation is the other major field of Elżbieta Szychta's scientific activity. This involves an analysis of the properties of energy-saving equipment for heating of railway turnouts. She has co-authored 4 patents in the area of her research.

Results of her research and scientific work have often been utilised in industry and transport, particularly in regard of energy efficient equipment.

She was a member or a deputy head of the teams leading several project grants of the Ministry of Science and Higher Education in Poland.

She has been given awards by the rector and Main Engineering Organisation (PL). She has received the President of Poland's Silver Cross of Merit (2000) and Medal of National Education Commission (2006).

At present, dr hab. inż. Elżbieta Szychta leads a project team to implement an induction heating system of railway turnouts.

Dr hab. inż. Elżbieta Szychta has been the principal organiser and chair of Scientific Committees of two regular international scientific engineering conferences: LogiTrans and TransComp, attended by more than 300 researchers from major national and international scientific centres and universities (organized annually since 2008).

She was also a member of the Scientific Committee of the 1st Central European School of Doctoral Study, Trenčianske Teplice Sk 2011 and a co-organizer (together with University of Žilina, EKVÚ Nova Dubnica, TU Ostrava, TU Košice, University West Bohemia Pilsen and TU Prague) of the 2nd European Central School of Doctoral Study in Krynica Górska Pl.

Dr hab. inż. Elżbieta Szychta is a member of editorial teams of 2 scientific journals, a number of scientific committees of international and national conferences, where she also reviews scientific articles. She has reviewed: 36 grants of the Ministry Science and Higher Education in Poland as well as a project in the frame of the system e-VEGA in Slovakia, 2 textbooks and a number of articles in: Przegląd Elektrotechniczny (PL), Communications–Scientific Letters University of Žilina (Sk), Technical University of Radom journals (PL).

She has supervised 1 doctorate proceeding completed with a defence in 2012. She is currently supervising 1 doctoral dissertation expected to be finalised in 2013.

Since 2005, she has been appointed a member of the Traffic Control Section of the Transport Committee, Polish Academy of Sciences (PAN), secretary of the Section since 2007. In 2011, she was elected a member of the Transport Committee, Polish Academy of Science for the term 2011-2014.

The topic of her inauguration lecture is referring to the field of her present and previous scientific and research activities and conforms to the contents and objectives of the study branch 5.2.11 Power Electrical Engineering, in which the designation procedure for professor degree has been started.

2. Teaching activities

Dr hab. inż. Elżbieta Szychta has co-authored 10 textbooks and lecture notes, as well as teaching materials for students at the Faculties of Transport and Electrical Engineering, concerning: Electronics and Power Electronics, Power Electronic Equipment, Electric Apparatus and Equipment, Traction Power Electronics, Electric Equipment of Means of Transport, Means of Transport, Rail Vehicles and Traction. She lectures in these subjects at both of the faculties mentioned above. She has supervised more than 200 (master and engineer degree) diploma projects.

She is the leader on the Polish side of the project Tempus „Master of Science program in terms of infrastructure and operation of high-speed rail in Russia and Ukraine” 2012/2015.

3. Organisational activities

During the 32 years of research and teaching work at the Technical University of Radom (now Kazimierz Pulaski University of Technology and Humanities in Radom), dr hab. inż. Elżbieta Szychta was a vice-dean of the Transport Faculty, University of Technology Radom in the term 2003 – 2008. Since 2008, she has been a dean of the Faculty of Transport and Electrical Engineering, University of Technology Radom. At the time, the Faculty she administers gained the right to award doctoral degrees in the field of electrical engineering in 2010 and doctor habilitatus degrees in the discipline of transport in 2011. She has launched two new training courses: Electronics and Telecommunications, and Tourism and Recreation and doctoral programs in the disciplines of Transport and Electrical Engineering (2010). Since 2012, she has headed the Department of Electrical and Power Engineering at the Faculty of Transport and Electrical Engineering. On the base of these facts it can be concluded that dr hab. inż. Elżbieta Szychta has very good and versatile manager abilities.

4. Conclusion

On the base of study of submitted documents actual work of the applicant complies with requirements for designation of university professor. After successful pass of designation procedure I am suggesting the Scientific Board of the Faculty of Electrical Engineering, University of Žilina to recommend designation of dr hab. inż. Elżbieta Szychta a university professor in the field of specialisation 5.2.11 Power Electrical Engineering.

