

## **Foreword:**

### **Anniversary of Professor Viorel POP**

It is a great pleasure to honor Viorel Pop with this dedicated issue on "*Studia Universitatis Babes-Bolyai Physica*". Viorel Pop has contributed to the synthesis and characterization of various materials, like intermetallic compounds, polycrystalline, nanocrystalline or nanocomposite magnetic materials and high  $T_c$  superconducting oxides. Viorel Pop research activity have covered a broad range of materials and methods and is well recognized in the worldwide scientific community.

Viorel Pop was born in Pintic/Dej, Cluj County, Romania, on March 25<sup>th</sup>, 1956 and graduated Faculty of Physics at the Babes-Bolyai University in 1981. In the period 1981-1982 he has followed Master studies in Solid State Physics at the same University. He performed his PhD studies between 1989 and 1993 at Babes-Bolyai University and Laboratoire de Magnétisme Louis Néel, Université Joseph Fourier under the supervision of prof. Emil Burzo and dr. Rafik Ballou. In this time his studies became more complex, and they covered a broader research field. His Ph.D. thesis was entitled "*Physical Properties of Rare Earth - 3d Transition Metals Compounds*".

He starts to work in 1982 as a researcher at Institute for Nuclear Power Reactors till 1983. During this period, his researches was focused on studies of nuclear fuel for the Cernavodă plant. From 1983 till 1990 he has occupied a research position Institute for Atomic Physics, Materials Physics and Technology Bucharest, Măgurele, Romania. In this period his activity was focused on preparation and characterization of rare earth-3d intermetallic compounds, different classes of hard magnetic materials and high  $T_c$  superconducting materials.

He has moved to Faculty of Physics, Babes-Bolyai University in 1990. He was researcher in physics (1990-1994) assistant professor (1994-1997), associate professor (1997-2002) and full professor starting with 2002. In this period, he was teaching different courses, seminars and laboratory classes, at bachelor level, like: - Magnetism, Magnetic Materials, Electricity and Magnetism, Materials Technology, master level courses as follows: "*Physics of Metals and Alloys*", "*Magnetic and Superconducting Materials*", "*Magnetic Phenomena Physics*", "*Solid State Electronics*" and Ph.D. level: "*Advanced methods in the study of the condensed state*". He was

focused on understanding the new directions in physics and applied physics, and to share this new information's, with him students, during the lectures. The teaching activities performed in all these years were very appreciated by him students.

Viorel Pop research interest was focused in the field the synthesis and study of the structural and magnetic properties of materials like rare earths-3d transition metals intermetallic compounds, superconducting oxides, spring magnets from both, basic and applied research. Recent research activity was focuses on two main areas:

- Synthesis and characterization of new hard magnetic phases without rare earths. Recently, the hard magnetic phases based on intermetallic compounds based on Fe and Mn have acquired a special interest in obtaining magnets without rare earths. His researches were focused in order to stabilize new magnetic phases with high anisotropy and a positive coupling of 3d magnetic moments.
- Preparation and characterization of hard/soft magnetic nanocomposites coupled by interphase exchange (spring magnets). It was shown that the interphase exchange coupling results from the intrinsic parameters of the hard and soft magnetic phases coupled by exchange interactions. The main objective in this direction was to influence the phases and their structure and microstructure on the interphase exchange torque.

The research results were expressed in more than 160 papers with 134 papers published in high impact ISI journals like journal of *Alloys and Compounds*, *Journal of Physics D: Applied Physics*, *Journal of Magnetism and Magnetic Materials*, *Journal of Materials Science*, *Solid State Communications*, *IEEE Transactions on Magnetics*, *Intermetallics*, *Journal of Applied Physics*, *Physica Status Solidi*, *Physical Review B* etc. He also has published 2 books. The high quality and impact on the scientific community of his publications is confirmed by the large number of citations (more than 1800). For his performance he was honoured with Romanian Academy award for the scientific activity, (1990) and Babes-Bolyai University award for excellence in didactic activity (2016).

Viorel Pop was invited in prestigious institutions for research stages at Laboratoire de magnétisme Louis Néel, CNRS, Grenoble, France (1991- 1992), ENEA, Dipartimento Energia, Frascati (Rome), Italy, (2002), Invited associate professor, Université Joseph Fourier, Laboratoire de Cristallographie, CNRS, Grenoble, France (2002), Invited researcher, Laboratoire de Cristallographie, CNRS, Grenoble, France (2004), (2008), Invited professor: Université Joseph Fourier, Laboratoire de magnétisme

Louis Néel, CNRS, Grenoble, France (2005), Université de Nantes, Institut de Matériaux Jean Rouxel (2012) and (2013), Chemnitz University of Technology, Germany (2012), (2013) and University of Augsburg, Institute of Physics, Germany (2014). In the same period Viorel was member in different committees for PdD defence at the doctoral schools from École Normale Supérieure Paris, Limoges University, Rhone-Alpes University Grenoble, and Osnabrueck University.

Besides the rigorous scientific activity carried out at the Faculty of Physics of the Babes-Bolyai University, he was permanently involved in the academic development at local and national levels. In this respect, he served as Director at the College of Environmental Physics, Dej, extension of the Faculty of Physics of Babes-Bolyai University Cluj-Napoca (2001–2003), Director at Institute of Technology of Babes-Bolyai University (2008–2010) where he structured and organized the Institute of Technology of University Babes-Bolyai, as Secretary of the Cluj Branch of the Romanian Physics Society (2008–2016), as member of the National Council for Research in Romanian University (2000–present), as member of the National Council for the Recognition of University Degrees (2010–2020).

Having in view his research results Viorel won more than 8 research grants as project coordinator and more than 10 research grants as team leader.

Viorel Pop was serving as Secretary for: Magnetic Materials and Superconductors Conference, Cluj-Napoca, (1994) and (1996); 3<sup>rd</sup> General Conference of the Balkan Physical Union, Cluj-Napoca, Romania 2-5 September (1997) and Co-director of European School on Magnetism: ESM 2007, *“New Magnetic Materials and their Functions”*, Cluj-Napoca, Romania and ESM 2015, *“From Basic Magnetic Concepts to Spin Currents”*, Cluj-Napoca, Romania.

He is also a member of the following international scientific societies: European Physical Society, Romanian Physical Society, IEEE Magnetics Society, Balkan Physical Society, Romanian Magnetic Materials Society

Under his supervision, many students have obtained their B.Sc. or M.Sc. Diploma, 5 students obtained a PhD in physics, and some of his coworkers decided to follow an academic career. In the name of all those who have benefited from Professor Viorel Pop's scientific achievements, as well as from his being a knowledgeable advisor and colleague, we would like to express our deepest appreciation and best wishes for the future.

**Dr. ROMULUS TETEAN**

*Professor at Babes-Bolyai University*

