

## FOREWORD: ANNIVERSARY OF PROFESSOR ROMULUS TETEAN VINTELER

I appreciate the opportunity offered by this anniversary issue of the scientific journal *Studia Physica* to note some important aspects related to the didactic and research activity of professor doctor Romulus Tetean.

Profesor Romulus Tetean was born in Sântejude, Cluj County, Romania, on November 11, 1957. He graduated Faculty of Physics at the Babeş-Bolyai University in 1981. Thanks to the exceptional results obtained during his undergraduate studies, Romulus Tetean was among the most meritorious students who followed the Solid State Physics master's degree, graduating in 1982 at Babeş-Bolyai University. He performed his PhD studies between 1993 and 1997 at Babeş-Bolyai University under the supervision of professor Emil Burzo. This period allowed him to advance his scientific competences in the field of materials science, more precisely in that of the magnetism of intermetallic compounds of 3d transition metals with rare earths.

The scientific research of prof. Tetean were mainly directed in the study of the structural, electronic, magnetic and transport properties of different classes of materials, such as rare earth - 3d transition metal intermetallic compounds, permanent magnets, nanostructured materials, perovskites and superconducting materials with possible technical applications such as permanent magnets, sensors, biomedicine and magnetic refrigeration. He was involved in preparation of new classes of materials and characterization by X-ray diffraction, X-ray photoelectron spectroscopy (XPS), magnetic susceptibility, magnetization, specific heat, electronic properties, Mossbauer effect, and muon spin rotation and relaxation ( $\mu$ SR).

The first job of professor Tetean was as middle school and high school teacher at Deusu school and later at Baciú school and Natural Science High School Cluj-Napoca, his teaching activity being appreciated by his students and colleagues.



In 1991, he achieved, by competition, the position of assistant at Faculty of Physics at the Babeş-Bolyai University. As a result of the exceptional didactic and scientific activity, professor Romulus Tetean evolved in his career to the positions of lecturer (1997-2001), assistant professor (2001-2008) and full professor at Babeş-Bolyai University from 2008 to present. In this period, he was teaching different courses, seminars and laboratory classes, for doctoral school, graduated and undergraduate students, like: Advanced methods in condensed matter physics – Doctoral school, Nanostructured materials, Magnetic and Superconducting Materials – for master students in Solid State Physics, Superconducting materials and applications, Semiconductors physics, Thermoelectric phenomena, Electricity and magnetism, Electrotechnic etc, for undergraduate students in technological physics, in physics and mathematics physics.

His organizational skills were brought to fruition as Head of Condensed Matter Physics and Advanced Technologies Department, Faculty of Physics, Babeş-Bolyai University and Head of Condensed Matter Physics and Advanced Technologies Research Center, Ioan Ursu Institute, Babeş-Bolyai University.

The research activity of professor Tetean was focused in the synthesis and study of the structural, electric and magnetic properties of materials like rare earths-3d transition metals intermetallic compounds, superconducting oxides, materials for magnetic hyperthermia, from both, fundamental researches and applications. Recent research activity was focuses on:

- Synthesis and characterization of new 3d transition metals - rare earths intermetallic compounds with applications in magnetocaloric refrigeration. In addition to the fundamental physics characteristics involved in the study of these systems, the aspects related to the stability of the phases, the efficiency of the magnetocaloric effect and the obtaining of predefined working temperatures were mainly followed.
- A very actual research activity is dedicated in preparation and characterization of magnetic materials for biomedicine. The aspects concerning magnetic hyperthermia followed different problems linked to the Specific Absorption Rate dependence on the external alternating magnetic field amplitude, toxicity, biodegradation etc.

The research results were expressed in more than 140 papers with 104 papers published in high impact ISI journals like journal of Journal of Molecular Structure, Nanoscale research letters, Nanomaterials, Molecules, Journal of Physics: Condensed Matter, Pharmaceutics, Chemical Engineering Journal, Magnetochemistry, Applied Surface Science, Molecular Crystals and Liquid Crystals, Journal of Alloys and

Compounds, Journal of Magnetism and Magnetic Materials, Journal of Materials Science, Solid State Communications, Journal of Applied Physics, Physica Status Solidi etc. He also has published 8 books. The high scientific and impact on the scientific community of his publications is confirmed by the large number of citations (more than 1040). For his scientific performance he was honored with Stefan Procopiu Romanian Academy prize 2019 and Babeş-Bolyai University award for excellence in research activity (2008 and 2011).

Besides the rigorous scientific activity carried out at the Faculty of Physics, Babeş-Bolyai University, Professor Romulus Tetean was involved in the academic development at local and national levels. He was invited in prestigious institutions for research stages at Univ. Joseph Fourier, Grenoble, Franta, Univ. Louis Pasteur, Strasbourg, Franta, Technical University of Chemnitz, Germania, University of Osnabrueck, Germania, Paul Scherrer Institute, Vilingen, Elvetia. These collaborations led to the development and valorization of scientific research, as well as to the improvement or management of new international collaboration programs, among which should be noted the perennial collaboration, both for scientific research and for didactic activity, with the University of Chemnitz. Professor Romulus Tetean was local coordinator for Tempus/Erasmus program and European Scheme for Physics Student Mobility.

Professor Tetean was involved in the organization or led the organizing committees of various conferences or summer schools, such as: Magnetic Materials and Superconductors Conference, Cluj-Napoca, 3rd General Conference of the Balkan Physical Union, Cluj-Napoca, German-Romanian summer schools, ICPAM 11, ICPAM 12, ICPAM 13, ICPAM 14, member in the organizing committee of two European Schools on Magnetism and many international conferences.

As consequence of his scientific results in research activity, professor Tetean has 12 invited lectures and 33 oral presentations at international conferences. Professor Tetean won by competition 6 national research grants as project coordinator and he lead 3 international grants.

Professor Romulus Tetean is member of the following national or international scientific societies: European Physical Society, Romanian Physical Society, Balkan Physical Society, Romanian Materials Society, Rare earths Society,  $\mu$ SR Society.

Under his supervision, many students have obtained their B.Sc. and M.Sc. Diploma or obtained PhD in physics. Some of his coworkers have pursued a successful research or academic career.

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On behalf of all those who have benefited from the scientific achievements of Professor Romulus Tetea, as well as from his fruitful discussions and advices, we wish to express our sincere appreciation and best wishes for the future.

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