



*Dedicated to Dr. Maria Zaharescu
on the occasion of her 80th anniversary*

MARIA ZAHARESCU: EMINENT RESEARCHER, ADVISER, COLLEAGUE AND FRIEND

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Time, this hyper-newtonian fluid, is flowing as a magic wind: 47 years passed, and it seems like yesterday when the yours truly was introduced to the youngest lady, head of department of the Institute of Physical Chemistry, Dr. Maria Zaharescu. The non-hazard made me a witness of the professional and managerial activity of the today-celebrated Academician. In 1971, she was a fresh *PhD* of the Cluj University and a Senior Researcher III at the Institute. It's worth mentioning, for a better picture of the promotion possibilities of that period, that in 1990 she was still holding the same professional degree!

Over and against those troubled times and the ones that followed, Dr. Maria Zaharescu built an impressive research career in the physical chemistry of oxide systems. A far from exhaustive list of approached topics would necessarily include:

- Reaction mechanisms, thermal phase equilibria, structure – properties relationships in the field of BaTiO₃ - based dielectrics, SnO₂ and ZnO – based semiconductors; Bi₂O₃ – based superconductors; LaAlO₃ – based ionic conductors; Nb₂O₃ – based dielectrics. Several works concerning phase equilibria in oxide systems have been included as reference data in NIST Standards Reference Database 31, NIST Ed., USA.
- In the field of sol – gel science, which she initiated in Romania, important results were obtained in chemical synthesis, structure and morphology of the derived thin films and their possible applications. A wide-ranging class of mono- and poly-component films and powders were investigated, including TiO₂, SiO₂, MgO, Al₂O₃, Fe₂O₃, ZrO₂, CeO₂, MoO_x, V₂O₅, MnO₂, SnO₂, ZnO. Oxide and hybrid nanocomposites were synthesized based on SiO₂ and hybrid matrices with the incorporation of enzymes, fullerenes, dyes, etc., for various applications. The vast expertise in sol-gel science was illustrated by several contributions in prestigious reference books: *1D Oxide Nanostructures Obtained by Sol-Gel and Hydrothermal Methods* (Springer), 2016, or book chapters in: *Handbook of Sol-Gel Science and Technology* (Springer), 2018; *The Sol-Gel Handbook* (Wiley), 2015; *Chemical Solution Depositions of Functional Oxide Thin Films* (Springer), 2013; *The Sol-Gel Process: Uniformity, Polymers and Applications* (Nova Science Publishers), 2011.
- Structure – properties relationships in vitreous systems, including: chemically and thermally resistant glasses, enamels, or glasses that reproduces antique ones and their preservation, etc. A special research effort was devoted to the physical-chemical properties of glasses containing PbO, ZrO₂, P₂O₅, or ZnO and CeO₂ with a special interest in environment protection, optical and biological applications.

For almost half a century Academician Maria Zaharescu was head of the *Oxide Compounds and Materials Science* department of the Institute of Physical Chemistry. She published over 400 papers with more than 280 in important ISI journals, such as: *Journal of Sol-Gel Science and Technology*, *Journal of*

Physical Chemistry, Journal of the American Ceramic Society, Journal of the European Ceramic Society, Journal of Materials Chemistry, etc. She also co-authored several books published by Roumanian Academy Publisher, Wiley, Springer, a. o. She coordinated numerous international projects financed by the NSF, NATO, EU and initiated several joint scientific partnerships with USA, Czech Republic, Bulgaria, Slovenia, France, Italy, Greece and India. She presented more than 50 invited lectures at prestigious scientific events that took place all over the world. She is an editorial board member for *Journal of Sol-Gel Science and Technology, Optoelectronics and Advanced Materials – Rapid Communications, Revue Roumaine de Chimie, Revista de Chimie, Revista Română de Materiale*.

For excellence in scientific research, she was rewarded and awarded in several circumstances: “Gheroghe Spacu” award, granted by the Romanian Academy (1971), “Meritul Științific” Medal (1982), “Meritul Științific” Order (1983), “Gheorghe Spacu” Honorary Diploma and Medal of the Roumanian Society of Chemistry (2007), “Eugen Segal” Excellence Medal of the American Chemical Society - Roumanian Branch (2015) and “Steaua României” National Order (2017).

Her scientific merit was also illustrated in recent international publications such as: *Who is who in Thermal Analysis and Calorimetry*, Springer, 2014 and *Successful Women in Ceramics and Glass Science and Engineering: Inspirational Profiles*, Wiley, 2015.

She was appointed and coordinated various scientific research structures of the Roumanian Academy and Ministry of Education and Research. She is currently Director of the Hard Sciences Department of the Doctoral School and member of the Ethics Commission of the Roumanian Academy.

A born leader and adviser, Dr. Maria Zaharescu established, from the very beginning of her activity within the Institute, a partnership and friendship climate. As an early witness of her complex work, I can attest an ideal combination of rigor and sustained effort with relaxed interludes when fruitful exchanges of cultural ideas took place. With a firm hand on research matters and a constant and healthy sense of humor, the former young head of department as well as the present Academician was always able to make the daily work agreeable, even in times with “heavy surrounding atmosphere”. She was often accompanied in this respect by her husband, Bogdan Zaharescu (a skillful painter with a recent personal exhibition at the Roumanian Academy Library), with whom many of our colleagues built a strong friendship.

A gifted and giving person, Maria Zaharescu could be characterized, with some inevitable degree of approximation, by discretion, decency and delicacy. Happy anniversary Academician Maria Zaharescu!