F17 - Memoriul ştiinţific al studentului doctorand

MEMORIU ŞTIINŢIFIC

Drd. Elena Mirabela Soare

Studii de doctorat

Perioada: 01.10.2020-19.09.2025

Conducător ştiinţific: Prof. Dr. Ing. Adelina Carmen Ianculescu

Domeniu: Inginerie Chimică

Titlul tezei de doctorat: Multifunctionality in ferroic perovskite systems

Activitate ştiinţifică

A. Lista de lucrări ştiinţifice (articole în reviste sau volume)

1. **Elena Mirabela Soare,** Cătălina-Andreea Stanciu, Roxana Elena Pătru, Vasile-Adrian Surdu, Leontin Pădurariu, Nadejda Horchidan, Adrian-Ionuţ Nicoară, Lucian Trupină, Bogdan Ştefan Vasile, Roxana Doina Truşcă, Liliana Mitoşeriu, Adelina-Carmen Ianculescu, "Grain size effects in $BaTi_{0.90}Hf_{0.10}O_3$ ceramics with phase coexistence: the influence of nanostructuring and of the internal stress on the functional properties", *Journal of Materials Research and Technology-JMR&T*, Elsevier, vol.38, pp. 5389–5408, 2025.
2. **Elena Mirabela Soare**, Cătălina-Andreea Stanciu, Roxana Elena Pătru, Vasile-Adrian Surdu, Nadejda Horchidan, Liliana Mitoşeriu, Ioana Pintilie, Bogdan Ştefan Vasile, Adrian-Ionuţ Nicoară, Roxana Doina Truşcă, Adelina-Carmen Ianculescu, "Composition-dependent structural, microstructural and functional characteristics of fine-grained $BaTi_{1-x}Hf_xO_3$ ceramics consolidated by Spark Plasma Sintering", *Journal of the European Ceramic Society*, Elsevier, vol. 45, nr. 15, p. 117600, 2025;
3. R. E. Pătru, C. A. Stanciu, V. A. Surdu, **E. M. Soare**, R. D. Truşcă, B. S. Vasile, A. I. Nicoară, L. Trupină, I. Pasuk, M. Botea, N. Horchidan, L. Mitoşeriu, L. Pintilie, I. Pintilie, A. C. Ianculescu, "Downscaling grain size toward the nanometre range – a key-factor for tuning the crystalline structure, phase transitions, dielectric and ferroelectric behaviour in $Ba_{0.8}Sr_{0.2}TiO_3$ ceramics", *Progress in Solid State Chemistry*, Elsevier, vol. 74 p. 100457, 2024;
4. Roxana-Elena Pătru, Cătălina Andreea Stanciu, **Elena Mirabela Soare**, Vasile-Adrian Surdu, Roxana Doina Truşcă, Adrian-Ionuţ Nicoară, Bogdan Ştefan Vasile, Giorgia Boni, Luminiţa Amarande, Nadejda Horchidan, Lavinia Petromela Curecheriu, Liliana Mitoşeriu, Lucian Pintilie, Ioana Pintilie, Adelina-Carmen. Ianculescu, "Grain size-driven effect on the functional properties in $Ba_{0.6}Sr_{0.4}TiO_3$ ceramics consolidated by spark plasma sintering", *Journal of the European Ceramic Society*, Elsevier, vol. 43, nr.8, pp. 3250-3265, 2023;
5. **Elena Mirabela Soare,** Roxana Doina Truşcă, Mihai Anastasescu, Adelina Ianculescu, Măriuca Gartner, Cătălina Andreea Stanciu, "Structural and optical characterization of Ce-doped $BaTiO_3$ thin films prepared by the sol-gel method", accepted for publication in *University Politehnica of Bucharest Scientific Bulletin Series B-Chemistry and Materials Science* (2025); ISSN: 1454-2331;

B. Participări la conferinţe/workshop-uri

1. Conferința, locația, data;

1) **Elena Mirabela Soare**, Cătălina-Andreea Stanciu, Roxana Patru, Vasile Adrian Surdu, Roxana Doina Trusca, Bogdan Ștefan Vasile, Ioana Pintilie, Adelina Carmen Ianculescu, Microstructure and dielectric properties of sol-gel $BaTi_{1-x}Hf_xO_3$ ceramics, 14th ECerS Conference for Young Scientists in Ceramics - CYSC 2021, Novi Sad, Serbia, October 20-23, 2021.
2) **Elena Mirabela Soare**, Cătălina-Andreea Stanciu, Roxana Pătru, Vasile-Adrian Surdu, Roxana Truşcă, Bogdan Vasile, Ioana Pintilie, Adelina Ianculescu, Composition-dependent characteristics of sol-gel $BaTi_{1-x}Hf_xO_3$ ceramics, "Ceramics in Europe" (ICC9, XVII ECerS Conference, XVIII Electroceramics Conference, July 10-14, 2022, Krakow, Poland.
3) **E. M. Soare**, M. Crişan, C.-A. Stanciu, R. Pătru, V.-A. Surdu, R.-D. Truşcă, B. Ş. Vasile, I. Pintilie A.-C. Ianculescu, Influence of the dopant content and sintering method on the properties of hafnium-modified barium

titanate ceramics prepared by the sol-gel method, International Conference of Physical Chemistry - ROMPHYSCHEM 17, September 25-27, 2023, Bucharest, Romania – poster.

4) **Elena Mirabela SOARE**, Cătălina-Andreea STANCIU, Roxana Elena PĂTRU, Vasile-Adrian SURDU, Nadejda HORCHIDAN, Liliana MITOŞERIU, Ioana PINTILIE, Bogdan Ştefan VASILE, Adrian-Ionuţ NICOARĂ, Roxana Doina TRUŞCĂ, Adelina-Carmen IANCULESCU, The influence of composition on structure, microstructure, and functional properties of fine-grained $BaTi_{1-x}Hf_xO_3$ ceramics processed via Spark Plasma Sintering, 16th ECerS Conference for Young Scientists in Ceramics, CYSC 2025, 15-18 October, Novi Sad, Serbia.

co-autor:

5) Adelina-Carmen Ianculescu, Cătălina A. Stanciu, **Elena Mirabela Soare**, Bogdan S. Vasile, Vasile-Adrian Surdu, Roxana D. Truşcă, Roxana E. Pătru Ioana Pintilie, Lucian Pintilie, Ioana Pintilie, Mihaela Botea, Mircea Udrea, Properties of bulk graded $(Ba,Sr)TiO_3$ ceramics with various architectures obtained by spark plasma sintering, "Ceramics in Europe" (ICC9, XVII ECerS Conference, XVIII Electroceramics Conference), July 10-14, 2022, Krakow, Poland.

6) Adelina-Carmen Ianculescu. Roxana-Elena Pătru, Cătălina Andreea Stanciu, **Elena Mirabela Soare**, Vasile-Adrian Surdu, Roxana Doina Truşcă, Adrian Ionuţ Nicoară, Bogdan Ştefan Vasile, Georgia Boni, Luminița Amarandei, Nadejda Horchidan, Lavinia Petronela Curecheriu, Liliana Mitoşeriu, Lucian Pintilie, Ioana Pintilie, Grain size-driven effects on the functional properties in $Ba_{0.6}Sr_{0.4}TiO_3$ ceramics consolidated by spark plasma sintering, XVIII Conference & Exhibition of the European Ceramic Society (XVIII ECerS), July 2-6, 2023, Lyon, France.

7) Adelina-Carmen Ianculescu, Vasile-Adrian Surdu, Cătălina Andreea Stanciu, Roxana-Elena Pătru, **Elena Mirabela Soare**, Roxana Doina Truşcă, Adrian Ionut Nicoară, Bogdan Ştefan Vasile, Lucian Pintilie, Ioana Pintilie, Liliana Mitoşeriu, Nadejda Horchidan, Barium strontium titanate functional materials: from nanopowders to multiscale-structured bulk ceramics, International Conference of Physical Chemistry -ROMPHYSCHEM 17, September 25-27, 2023, Bucharest, Romania.

8) A.-C. Ianculescu, R. Pătru, C. Stanciu, V. A. Surdu, **E. M. Soare**, A.-I. Nicoară, R. D. Truşcă, B. S. Vasile, I. Pintilie, L. Pintilie, Mutifunctional $(Ba,Sr)TiO_3$ systems: from nanopowders to bulk ceramics – Processing, properties and applications, 10th Conference on Advanced Materials (ROCAM-2024), July 15-18, Bucharest, Romania.

9) A.-C. Ianculescu, C.-A. Stanciu, **E. M. Soare**, R. E. Pătru, V.-A. Surdu, R. D. Truşcă, B. S. Vasile, A.-I. Nicoară, L. Trupină, I. Pintilie, $BaTiO_3$-based functional materials used in electronics: from nanopowders to micro- and nanostructured ceramics, 12th International Congress on Microscopy & Spectroscopy (INTERM 2025), April 8-14, 2025, Ölüdeniz, Turkey.

Student-doctorand

Soare Elena Mirabela