



CEMHTI-CNRS, France hosted PhD. Student Elisa-Gabriela (DUMBRAVĂ) BROASCĂ from the National University of Science and Technology POLITEHNICA Bucharest, Romania



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Driven by the ambition to expand her scientific horizons and engage in a truly international research environment, Elisa-Gabriela (DUMBRAVĂ) BROASCĂ, a PhD student from the National University of Science and Technology POLITEHNICA Bucharest, undertook an interdisciplinary secondment at CNRS-CEMHTI in France. The experience was designed to foster meaningful research exchange and facilitate knowledge transfer across institutions, while supporting the development of advanced scientific competences.

During her stay, Elisa-Gabriela strengthened her expertise in the characterization of advanced materials, gaining hands-on experience with innovative analytical techniques and working within a highly interdisciplinary setting. This exposure not only enhanced her

technical skillset, but also broadened her scientific perspective, allowing her to approach research challenges with greater confidence and adaptability.

Throughout the secondment, she was supervised and mentored by Lavinia BALAN, Research Director at CNRS-CEMHTI, whose guidance played a key role in integrating Elisa-Gabriela into the host institution's research environment and ensuring the success of her activities. The experience also contributed to building lasting professional connections, reinforcing the collaborative spirit at the heart of the MSCA programme.



Elisa-Gabriela collaborated with Postdoctoral Researcher Ahmed Malek Djaballah during her secondment.



Key Achievements and Activities

During the secondment, Elisa-Gabriela's research activities were closely aligned with the objectives of Work Package 2 (WP2), with a specific focus on the characterization of $(\text{EtO})_3\text{Si-R-Si}(\text{OEt})_3$. Her work combined experimental analysis with advanced data interpretation, contributing to a deeper understanding of the material's structural properties.

She conducted X-ray diffraction (XRD) and Fourier-transform infrared spectroscopy (FT-IR) analyses on synthesized materials, actively engaging in all stages of the process, from sample preparation to data acquisition, processing, and interpretation. In parallel, she applied HighScore Plus software to perform structural analysis, enabling the accurate identification of crystalline structures and the assessment of phase purity.

Beyond her core research activities, Elisa-Gabriela also had the opportunity to explore several laboratories within CNRS-CEMHTI, gaining valuable insights into ongoing research projects, experimental methodologies, and the broader scientific infrastructure of the host institution. This immersive experience further enriched her understanding of interdisciplinary research practices and strengthened her ability to operate in complex, international research environments.



Overall, the secondment represented a valuable milestone in Elisa-Gabriela's academic and professional journey. By engaging in a dynamic and international research environment, she was able to broaden her perspectives, deepen her technical expertise, and build meaningful professional connections. This experience not only strengthened her scientific profile, but also enhanced her adaptability and readiness to pursue a wide range of future career opportunities across academia, industry, and interdisciplinary research contexts.

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