Transilvania University of Brașov
INTERDISCIPLINARY DOCTORAL SCHOOL

ADMISSION TO DOCTORAL STUDIES **Session September 2026**

Field of doctoral studies: Environmental Engineering

Doctoral supervisors: Prof. Joaquín Silvestre Albero

TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

TOPIC 1: *Development of activated carbons from lignin derivatives to be applied in wastewater treatment and gas separation processes*
Contents / Main aspects to be considered – *The main role of the PhD student would be the conversion of lignin derivatives into high surface area activated carbon materials. Synthesized materials will be modified either through the introduction of specific functional groups or through the incorporation of specific metal species. The final application of the synthesized materials will be gas separation (e.g., CO_2/CH_4 separation) and/or their application in the photocatalytic degradation of contaminants in industrial water effluents.*
Recommended bibliography: Rodriguez-Reinoso, F.; Marsh, H. (Eds.). Activated Carbon. Elsevier Science, 2006. Abreu-Jaureguí, C., et al. "Improved Photocatalytic Performance of TiO2/Carbon Photocatalysts: Role of Carbon Additive." Environmental Research, vol. 251, Jun. 2024, p. 118672, https://doi.org/10.1016/j.envres.2024.118672. Cruz, Orlando F., et al. "Activated Carbon from Polyurethane Residues as Molecular Sieves for Kinetic Adsorption/Separation of CO_2/CH_4." Colloids and Surfaces A: Physicochemical and Engineering Aspects, vol. 652, Nov. 2022, p. 129882, https://doi.org/10.1016/j.colsurfa.2022.129882.
Prerequisites / Remarks:
x Scientific Doctorate **x Professional Doctorate**
x without tuition fee (state budget funded) **x with tuition fee or with funding from other sources than the state budget**

Doctoral supervisor,

Prof. Dr. Joaquin Silvestre Albero

Signature

Coordinator of the field of doctoral studies,

Prof. Dr. Luminita Andronic

Signature