

ADMISSION TO DOCTORAL STUDIES

Session September 2025

Field of doctoral studies: Mechanical Engineering

Doctoral supervisor: Assoc. prof. Daniela Şova

TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

TOPIC 1: *Biomass utilization to obtain ecological composites with heat- and vapour insulation properties*

Contents / Main aspects to be considered - *to be adapted/ completed/ deleted*

Identification of biomass and adhesives for use in composites

Composites manufacturing (materials, methods, parameters)

Mathematical and numerical modeling of heat and mass transfer in composites

Experimental analysis of heat and mass transfer in composites

Recommended bibliography:

1. Incropera F.P., Dewitt D.P., Bergman T.L. Lavine A.S. Fundamentals of heat and mass transfer, John Wiley & Sons, New York, 2007

2. Speyer R.F. Thermal analysis of materials, Marcel Dekker, New York, 1994

3. Asanache H., Demir V., Delia F. Higrotermica clădirilor. Aplicații. Universitatea Tehnică de Construcții, București, 1998

4. Amarasinghe I.T., Qian Y., Gunawardena T., Mendis P., Belleville B. Composite panels from wood waste: a detailed review of processes, standards, and applications, Journal of Composites Science, 8, 417, 2024

Prerequisites / Remarks: *to be adapted/ completed/ deleted*

Notions of heat and mass transfer

Notions of mathematical and numerical modeling of heat and mass transfer

☒ **Scientific Doctorate (full-time only)**

☐ **Professional Doctorate (full-time or part-time)**

☒ **without tuition fee (state budget funded)**

☐ **with tuition fee or with funding from other sources than the state budget**

TOPIC 2: *suggested title*

Contents / Main aspects to be considered - *to be adapted/ completed/ deleted*

Recommended bibliography:

Prerequisites / Remarks: <i>to be adapted/ completed/ deleted</i>
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Doctoral supervisor,

Assoc. Prof. Dr. Eng. Daniela Şova

Coordinator of the field of doctoral studies,

Prof. Dr. Eng. Maria-Luminița Scutaru