



## Application Form for WFC Academic Committee Member

### Personal Info.

Name: Angelika Kmita

Title: DSc, PhD, prof. AGH

Affiliation: AGH University of Krakow,

Nationality: Polish



### Research Interest

Research activities are focused in the following areas:

- a) design and synthesis of nanoparticles with controlled morphology, composition and size;
- b) design and synthesis of nanocomposites, core/shell structures based on polymeric materials;
- c) synthesis of magnetic fluids (ferrofluids);
- d) examination of the magnetic properties of the aqueous solutions of nanoparticles;
- e) investigation of rheological properties of liquid phases;
- f) modification of foundry binders (eg. water glass) with metal oxide nanoparticles in organic or inorganic solvents;
- g) topics related to the environmental protection problems in the foundry industry;

### Main Achievements (<200 words)

#### **Author or co-author of books:**

- Habilitation monograph: **A. Kmita. *Thermal decomposition of nanocomposite molding binder based on phenol-formaldehyde resin with zinc ferrite***. 2021, AGH Publishing House (in Polish).
- Monograph: **M. Holtzer, A. Kmita. *Mold and Core Sands in Metalcasting: Chemistry and Ecology. Sustainable Development***. 2020, , Publisher: Springer Nature Switzerland AG (in English).  
*ISBN: 978-3-030-53209-3 DOI: 10.1007/978-3-030-53210-9*

#### **Author or co-author of selected publications:**

- R. Dańko, **A. Kmita**, M. Holtzer, R. Dańko, D. Lehmhus, S. Tapola: **Development of inorganic binder systems to minimise emissions in ferrous foundries. Sustainable Materials and Technologies**, 2023, DOI: 10.1016/j.susmat.2023.e00666
- **A. Kmita**, D. Drożyński, A. Roczniak et al. **Adhesive hybrid nanocomposites for potential applications in moulding sand technology. Composites Part B Engineering**, 2018, DOI: 10.1016/j.compositesb.2018.03.046



**Participation in the implementation of European projects:**

- **GREEN FOUNDRY LIFE project 1/7/2018-30/6/2022, IFE17 ENV/FI/000173**  
*“Inorganic binder system to minimize emissions, improve indoor air quality, purify and reuse of contaminated foundry sand.”* <https://webgate.ec.europa.eu/life/publicWebsite/project/LIFE17-ENV-FI-000173/inorganic-binder-system-to-minimize-emissions-improve-indoor-air-quality-purify-and-reuse-of-contaminated-foundry-sand>
- **GREEN CASTING LIFE project (LIFE21-ENV-FI-101074439) (2022-2026) “Towards zero emissions in European ferrous foundries using inorganic binder systems.”**  
<https://webgate.ec.europa.eu/life/publicWebsite/project/LIFE21-ENV-FI-GREEN-CASTING-LIFE-101074439/towards-zero-emissions-in-european-ferrous-foundries-using-inorganic-binder-systems>