



SPEAKER:

Assistant Prof. Arn Mignon

KU Leuven, Belgium



KU LEUVEN

CHAired BY:

Prof. Geert-Jan Graulus

WHEN ?

13th of March 2025

(Thursday)

11.00 - 12.00 h

WHERE ?

Building D, Auditorium A102
Hasselt University,
Diepenbeek Campus

MRS/E-MRS Joint Student Chapter, Hasselt University
proudly announces to host its

2025 Materials Science Lecture series: ADVANCED FUNCTIONAL MATERIALS

'Smart' polymeric systems for biomedical applications

The Smart Polymeric Biomaterials Research group focuses on the development of stimuli-responsive polymers for a variety of applications such as healing of burn wounds and diabetic ulcers, flexor tendon repair, new aortic valve support structures, dental implants and controlled drug release for inflammatory bowel disease. The synthesized polymers are being processed into either nanofiber through electrospinning and melt electrowriting or into nanoparticles such as polymersomes. By introducing the response to external stimuli such as pH, temperature, enzymes, reactive oxygen species, etc., a control can be made over drug release from the nanoparticles or swelling of the nanofibers. Within this presentation, I plan to describe in more detail the work that has been done on this research.

About our guest:

Arn graduated as master of science in Chemical Engineering at Ghent University. He graduated his PhD in 2016, whereafter he obtained a FWO postdoctoral fellowship. He has worked during his PhD and postdoctoral fellowship on creating stimuli-responsive polymers for different applications. Prior to this, he has worked for 9 months on an INTERREG project. In that period, he has gathered extensive expertise on polymer synthesis, nanoparticle synthesis, processing (electrospinning) and characterization (physico-chemical, thermal, mechanical, visual) and gained hands-on experience with imaging techniques for *in vitro* characterization of biomaterials. Since 2020, he has started as assistant professor at the faculty of Engineering Technology, KU Leuven, focusing his time 50% on educational activities and 50% on research. The focus of his research for the coming years lies in the **synthesis** of new **smart polymers** and **stimuli-responsive polymersomes** for biomedical applications (healing of burn wounds and diabetic ulcers, flexor tendon repair, dental implants, support structures for new aortic valves) and the **processing** of these polymers through different additive manufacturing techniques with a main focus on electrospinning. His group is now consisting of 7 PhD students (of which 4 as main promotor), 2 joint PhDs with UGent and two shared postdoctoral researchers. He has (co)authored 44 journal publications and is co-owner of 2 patents.



Vlaamse
overheid

