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COMBINE MSCA
Doctoral Network 2025-2029
/ThermoFluids Lab @ UNSA

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- WIRE postdoc fellow Mathematics Munster

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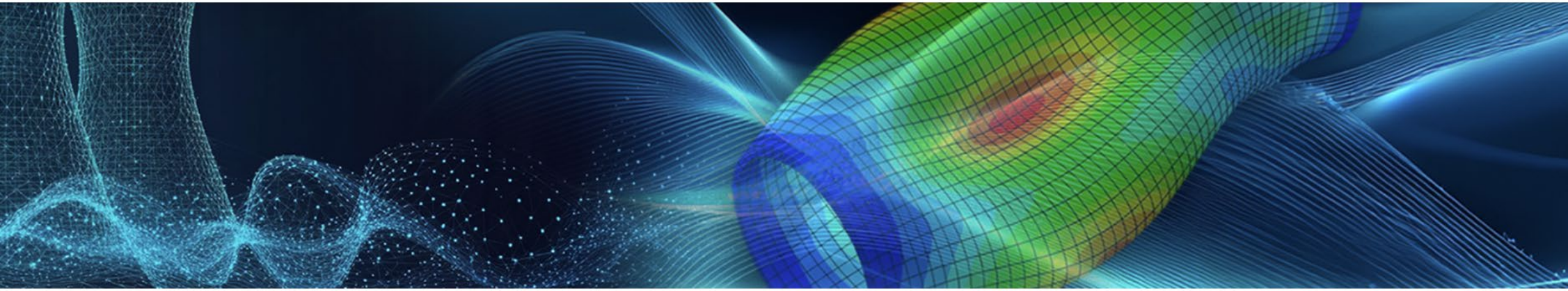
Universität Münster

COHORT 2025

Dr. Amra Hasečić: Faster, Greener Heat Transfer Simulations with Machine Learning

July 03, 2025
by: Dr Amra Hasečić / Photo: © Nikolaus Urban
edited by WiRe Team

Hello! My name is Amra Hasečić, and I'm a mechanical engineer and researcher from Bosnia and Herzegovina, currently based at the Mathematics Münster – Cluster of Excellence as a WiRe Fellow. I obtained my PhD at the Faculty of Mechanical Engineering, University of Sarajevo in computational fluid dynamics, with a focus on high-temperature multiphase flows — a critical area for industries like metal casting, glass manufacturing, and concentrated solar power. These processes often involve extreme temperatures where radiative heat transfer dominates. But measuring or



About

Project Overview

To optimize their products, engineers use computational design tools. If fluid flow is part of the problem, then Computational Fluid Dynamics (CFD) comes into play. However, real-world fluid dynamics are complex, and computational models may not capture every nuance. CFD nowadays has a problem of scale that clashes with limited computational resources. This is even more critical when the fluid is composed of immiscible phases (e.g. bubbles, drops or particles), or when the fluid mechanically interacts with structures, e.g. inducing vibrations, erosion and other unwanted effects such as cavitation. The latter is known as Fluid-Structure Interaction (FSI) which, in scientific terms, brings together the fields of structural and fluid mechanics. FSI is a prominent example of a coupled physics problem. It is inseparably connected with other disciplines such as thermodynamics, materials science, chemical engineering, metallurgy, and more. For scientific and technical progress, new methods and knowledge are needed to understand, predict and control the interactions of fluid flow in technical domains.

Job offer

JOB | BOSNIA AND HERZEGOVINA

University of Sarajevo | Posted on: 1 March 2026

Doctoral Candidate – Deep Learning for Solidification in Multiphase Flows with Radiative Heat Transfer (MSCA DN COMBINE DC11)

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STATUS: EXPIRED

1 MAR 2026

Job Information

Organisation/Company	University of Sarajevo
Department	Faculty of Mechanical Engineering
Research Field	Engineering » Process engineering Engineering » Thermal engineering Engineering » Simulation engineering

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Thank you!

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