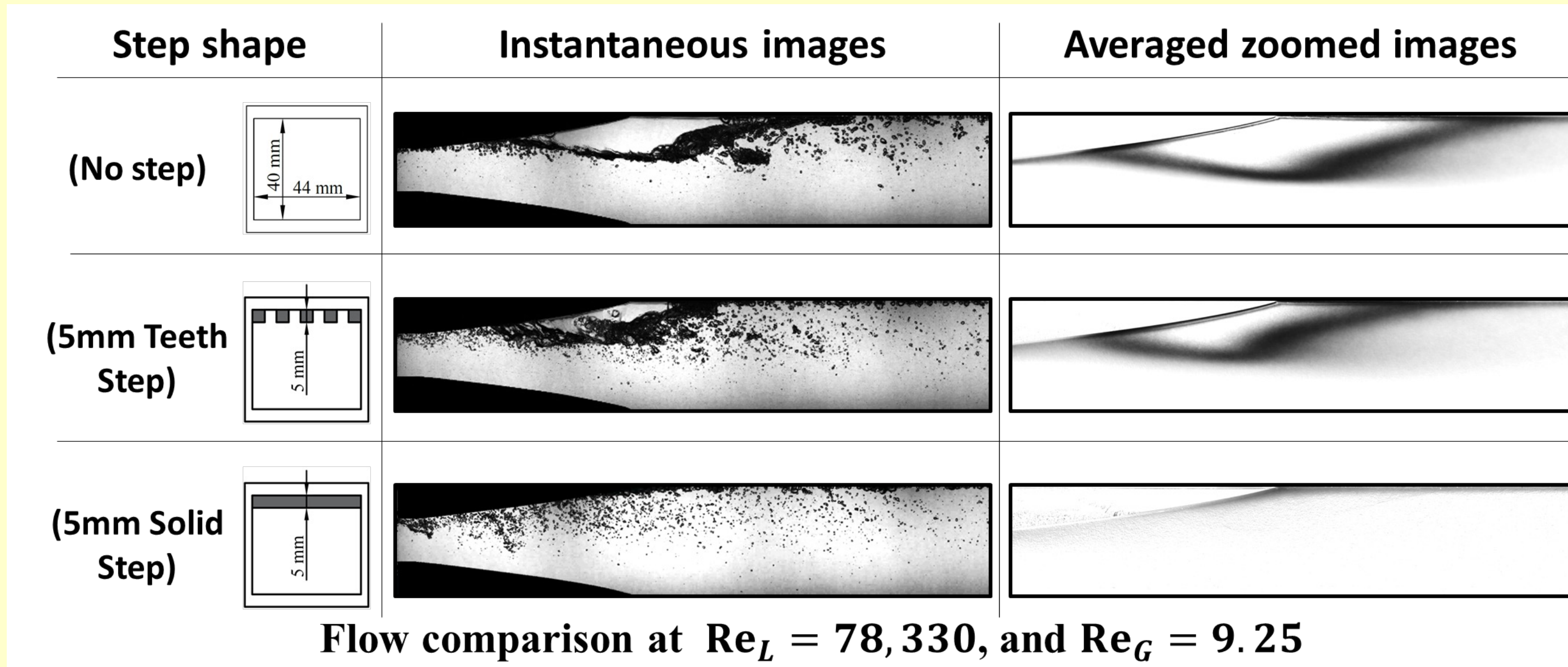


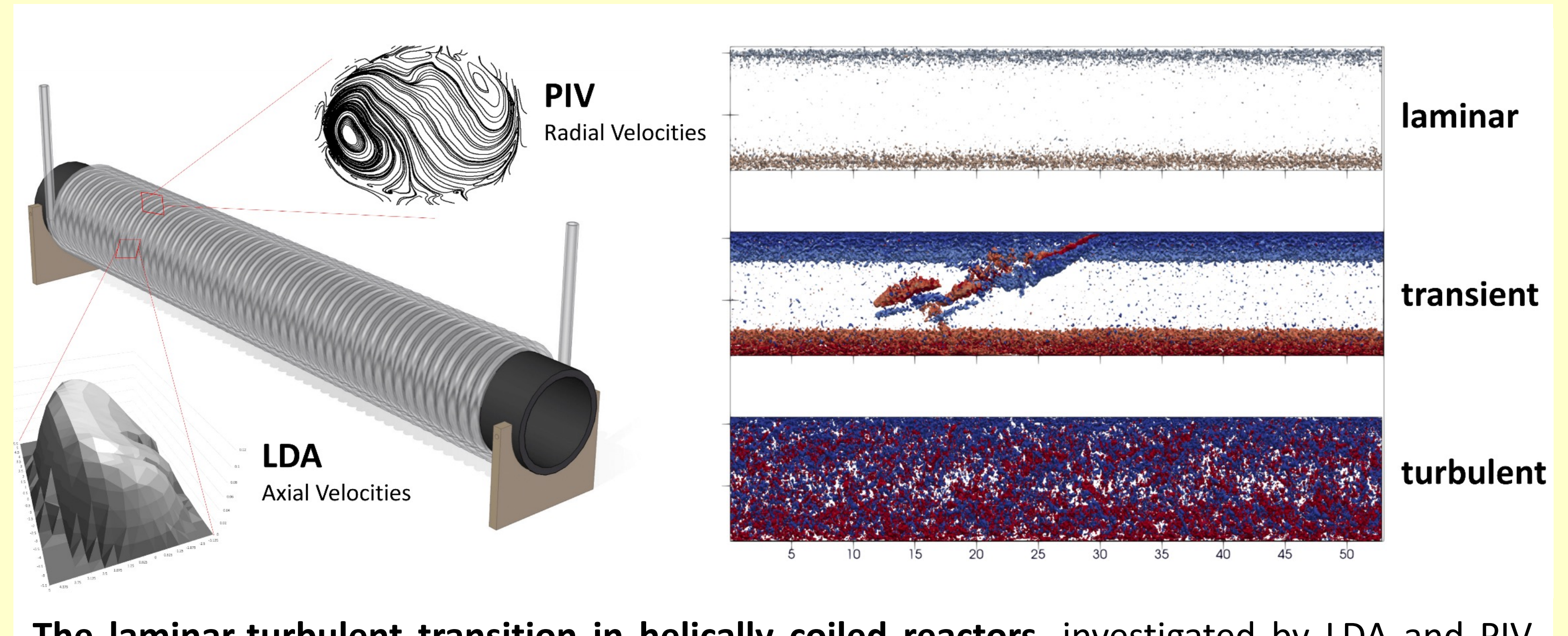
Fascinating experiments in fluid mechanics from 2024



Flow comparison at $Re_L = 78,330$, and $Re_G = 9.25$

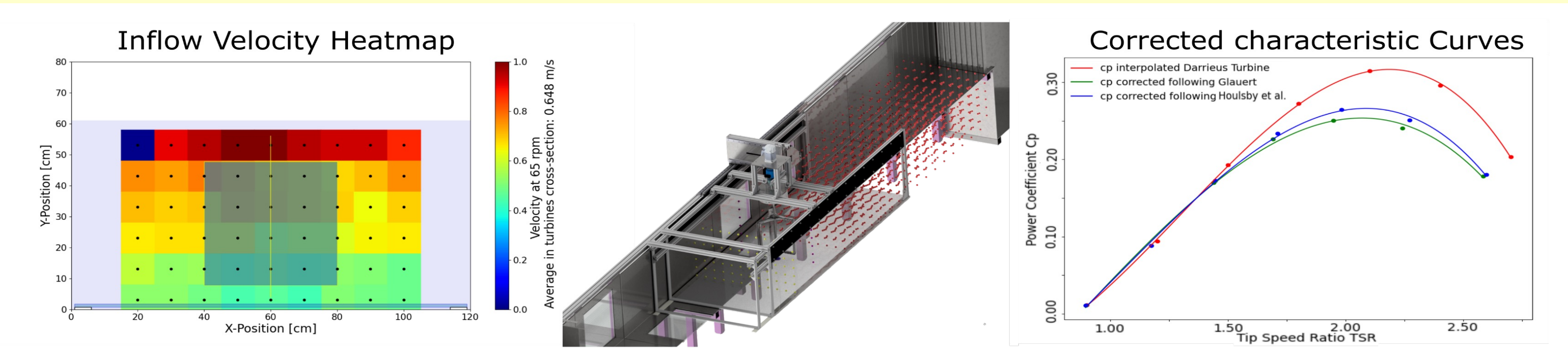
Minimizing gas accumulation in two-phase flow within a diverging channel using cross-flow steps. These findings, obtained by high-speed imagery, will validate computational models and aid in optimizing real centrifugal pumps.

Mansour



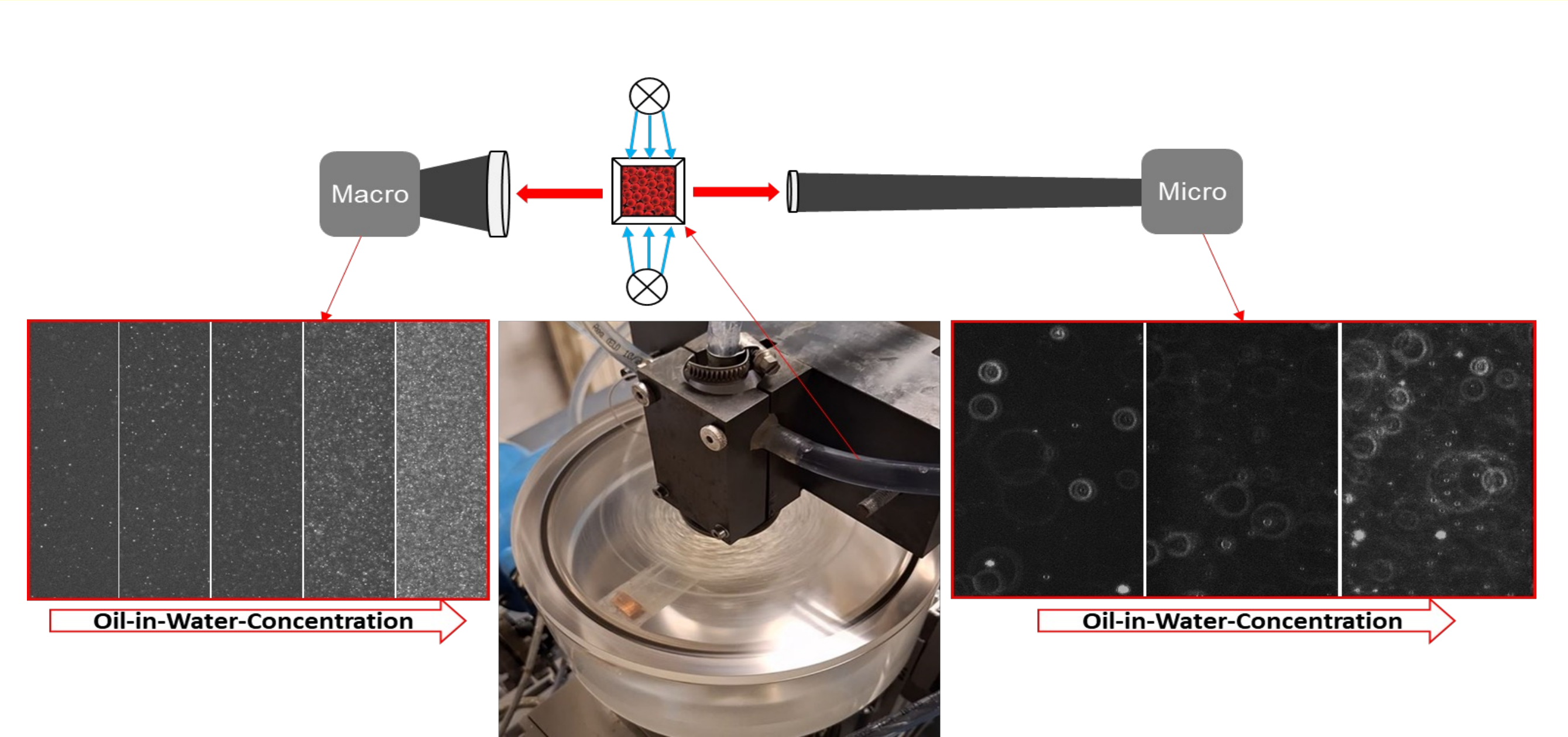
The laminar-turbulent transition in helically coiled reactors, investigated by LDA and PIV. The resulting vector fields are visualised as pseudo 3D structures of the vortices, which can be categorized in laminar Dean vortices, transient Lyne vortices and turbulent chaotic structures.

Müller, Zähringer



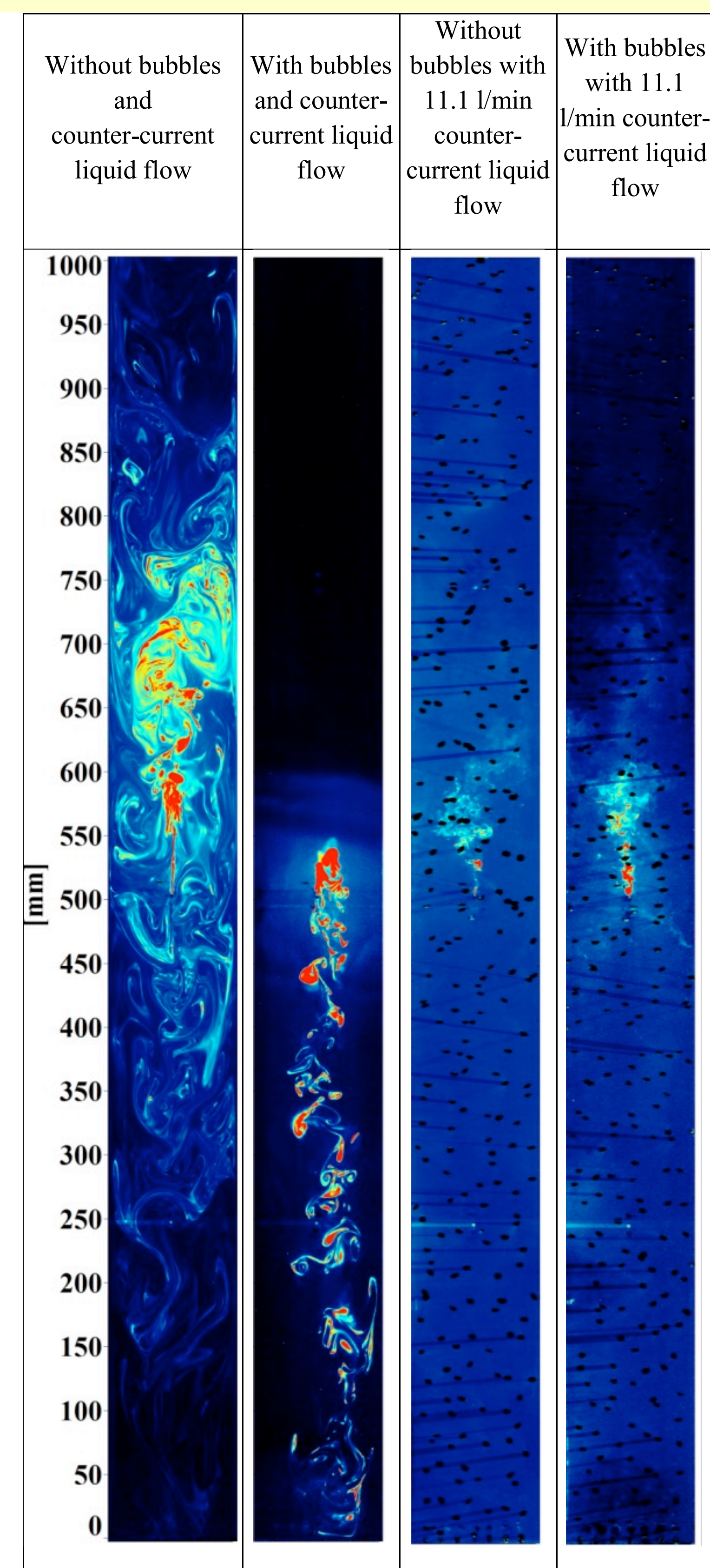
Investigation of the **influence of the water channel characteristics on the power coefficient of experimental turbines**. Left: Uneven inflow velocity distribution. Center: Acoustic Doppler Velocimetry Investigation points. Right: Corrected characteristic curves of a Vertical Axis Tidal Turbine.

Bennecke, Ruiz-Hussman, Hilbrecht, Hoerner



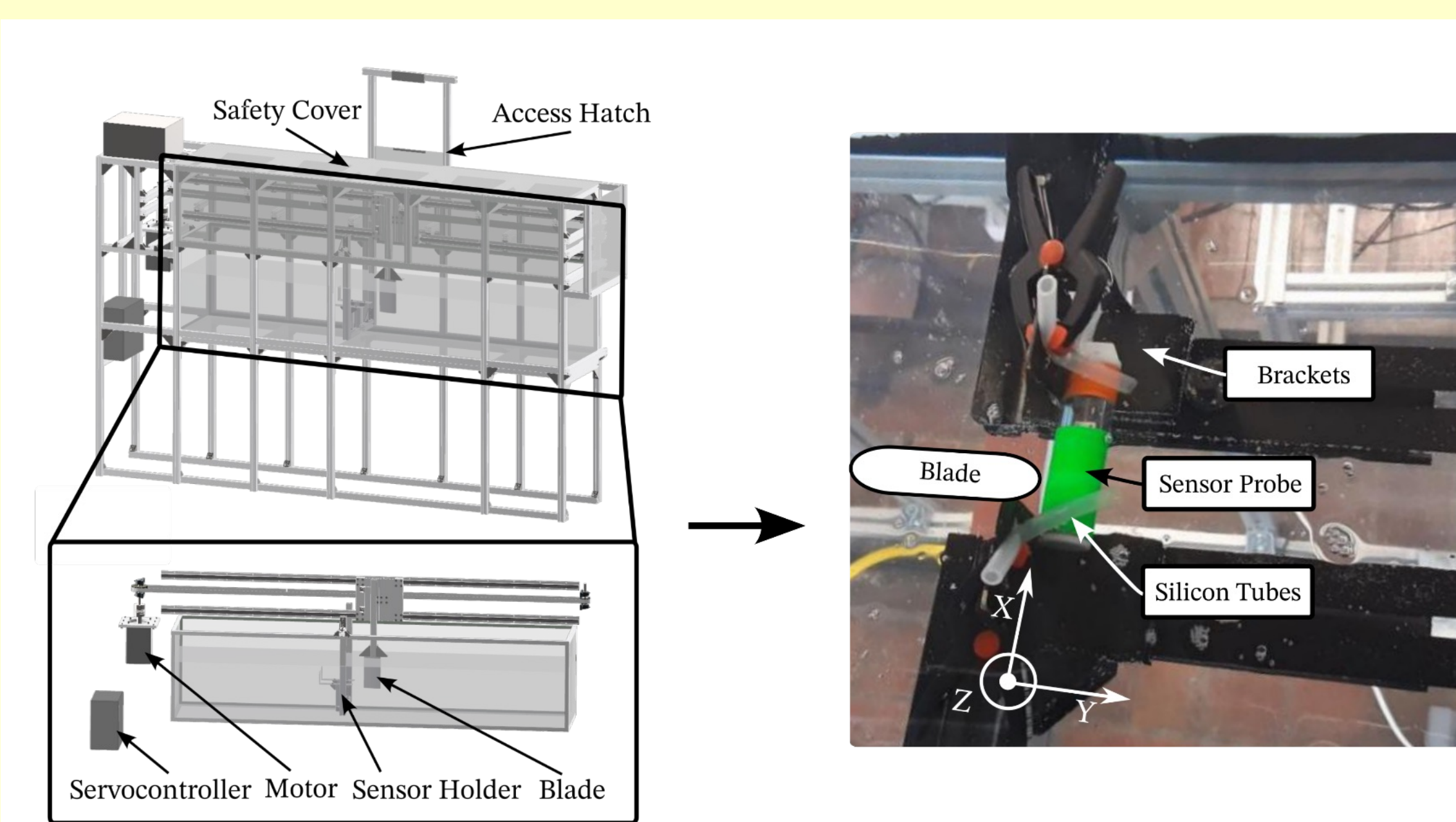
Cleaning water from oil contaminations with a Pitot pump: purity of the water is evaluated by the fluorescence of Nile Red which binds to oil and shows a correlation between fluorescence intensity and oil concentration.

Dafis



Bubble induced mixing in a bubble column with and without counter-current liquid flow, visualized with by fluorescence of Sulforhodamine G.

Kováts, Zähringer

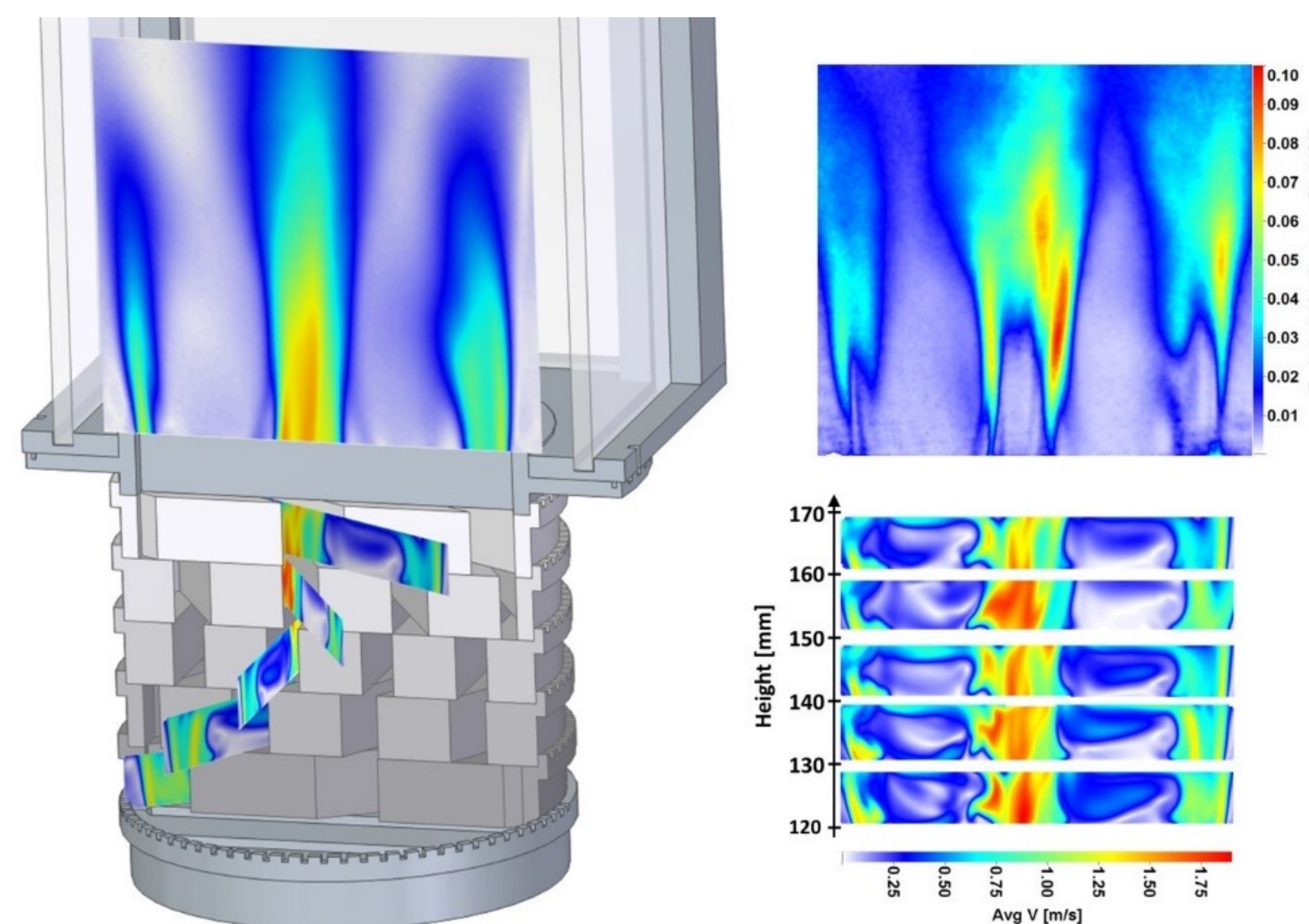


Open laboratory blade strike rig for evaluating fish injury and mortality risks, as well as testing passive sensors.

Kösters, Tuhtan, Efimov, Kruusmaa, Hoerner

Flow field measurements inside a polyhedral packed bed with air flow: a specially designed geometry allows to perform optical measuring techniques like Particle Image Velocimetry for the evaluation of flow velocity and turbulence parameters.

Velten, Hülz, Zähringer



The **continuous, counter-current extraction process** of Artemisia Annu L. leaves was hydrodynamically analysed. The improved understanding of the process is valuable for the extractor design and optimisation.

Bhuva, Lehr



A promising solution for **cleaning rivers from trash** involves placing a series of nozzles along the riverbed to direct trash towards the riverbanks for easier collection. Lab experiments utilize a high-speed camera to capture and analyse the flow paths created by these nozzles.

Kerikous

