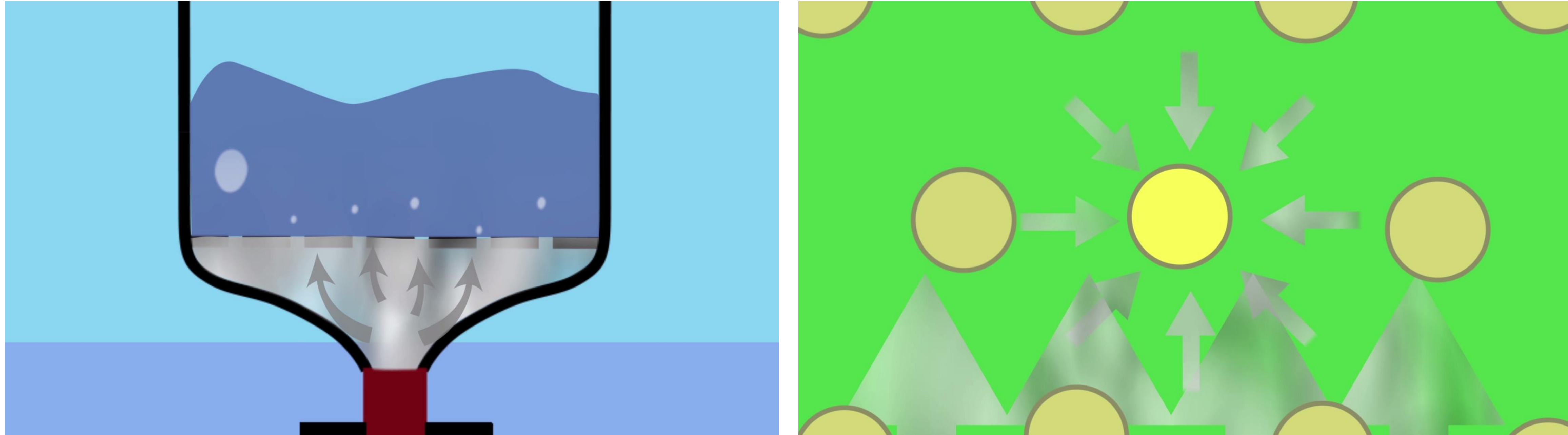


Process intensification in a Gas-solid vortex reactor

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 Technologiepark 914, 9052 Ghent, Belgium
<https://www.lct.ugent.be>

A **catalyst** accelerates a chemical reaction without being consumed in the reaction.

Good **heat and mass transfer** is required for optimal catalyst use, therefore **fluidization** is applied.

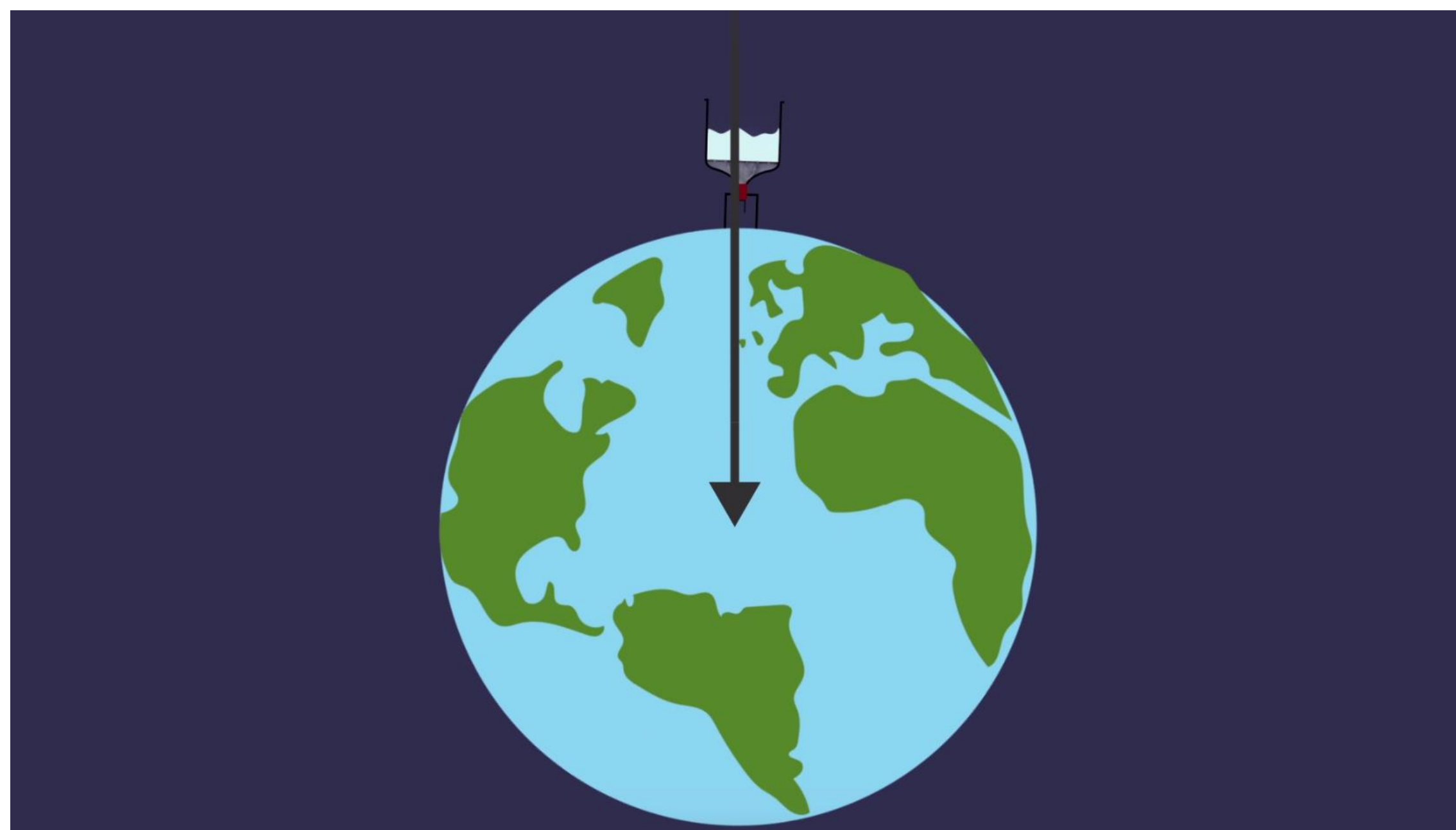


The **slip velocity** is the difference between the velocity of the solid particle and the velocity of the gas phase.

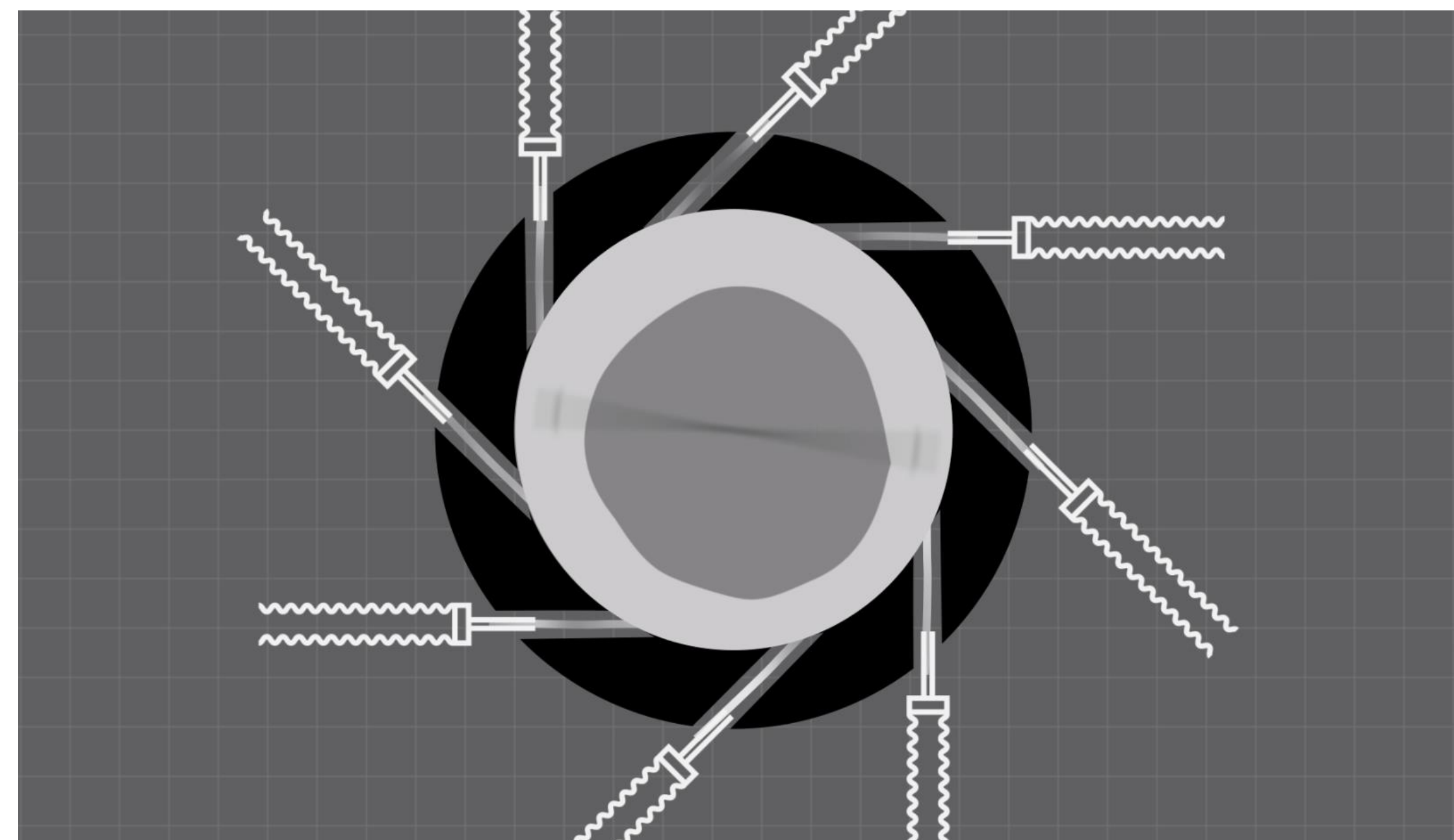
The higher the slip velocity, the better the heat and mass transfer.

The following forces are used to counteract the drag force from the gas.

Gravitational force

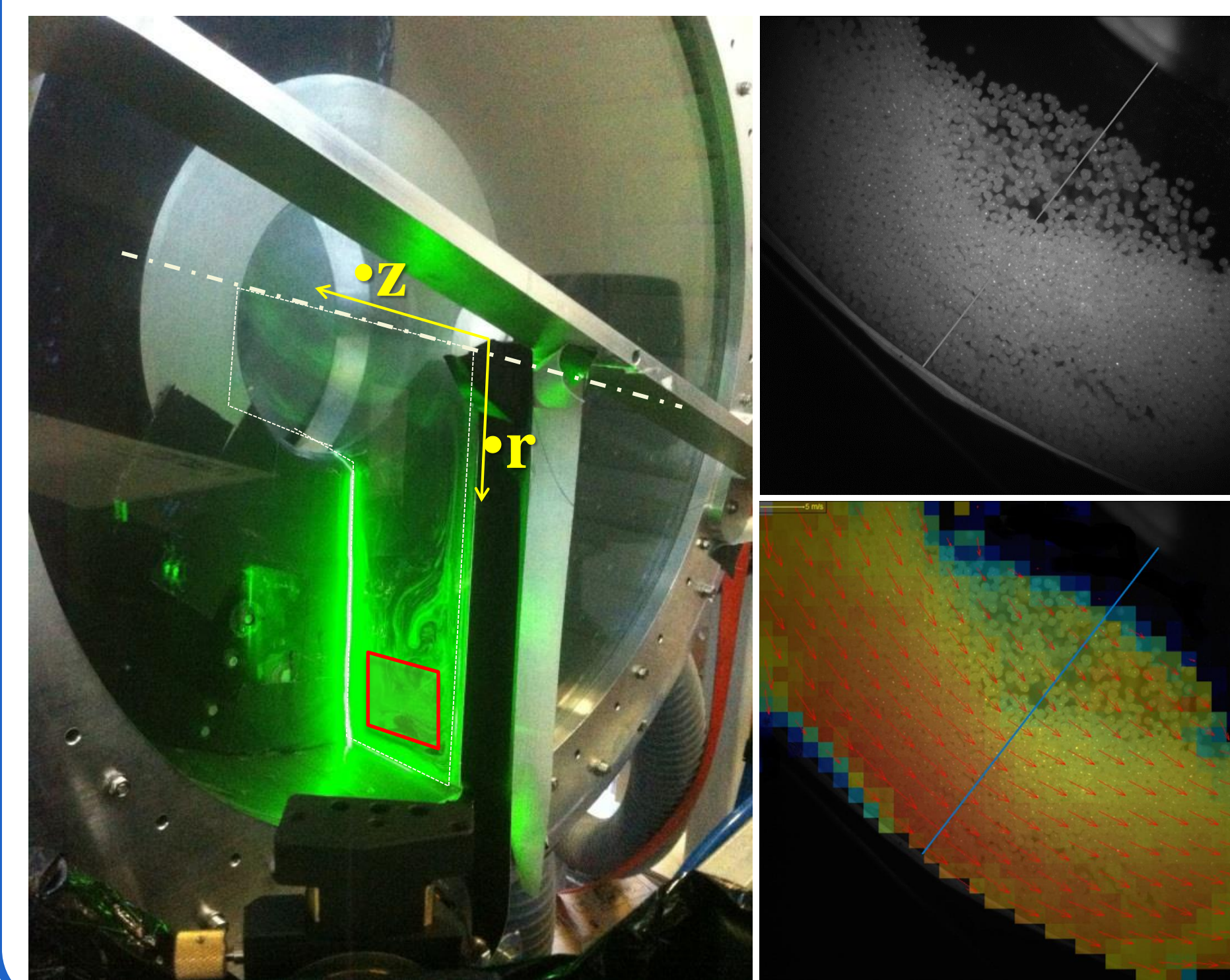


Centrifugal force

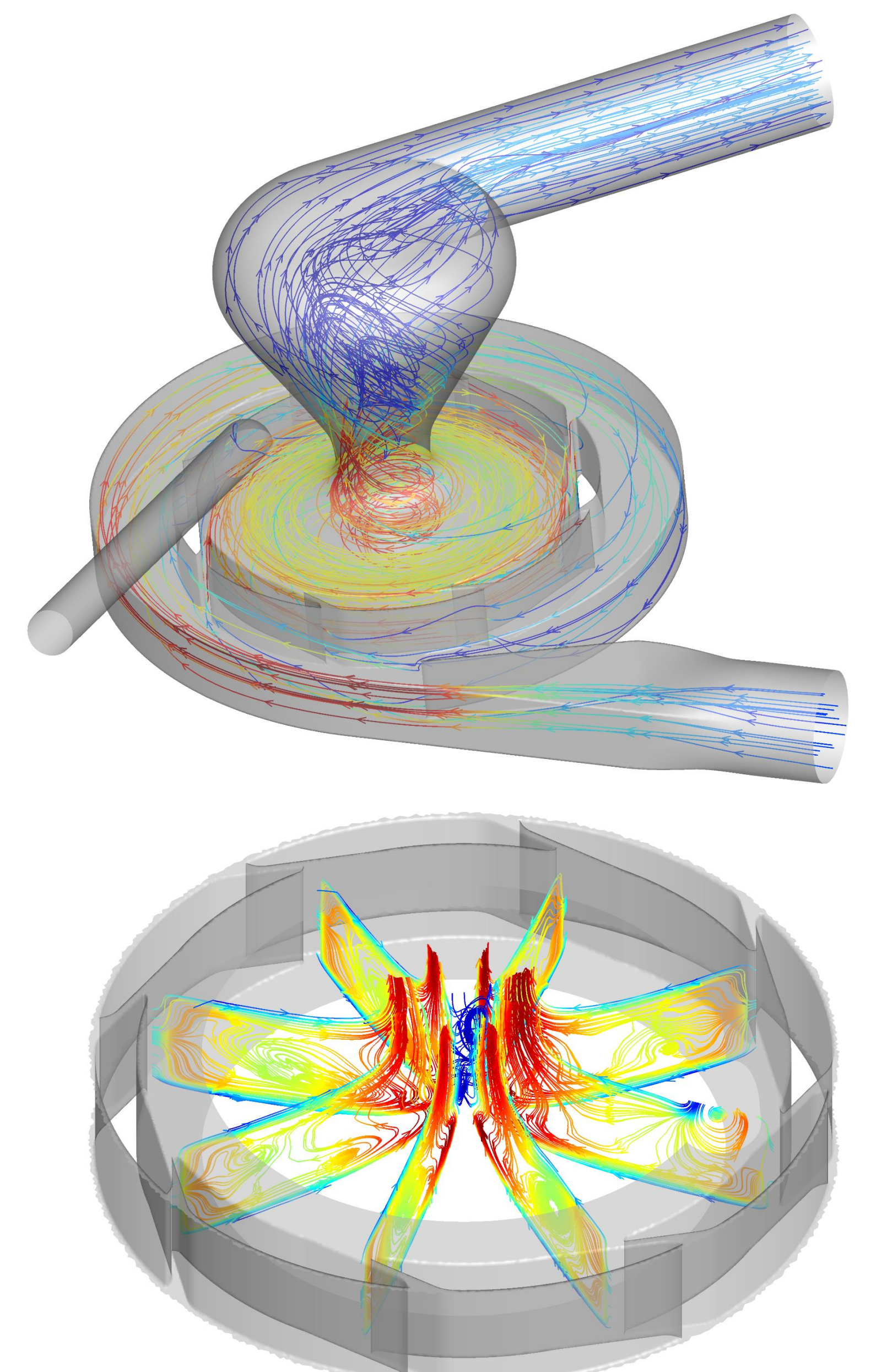


Higher slip velocity with centrifugal force.

Particle Image Velocimetry

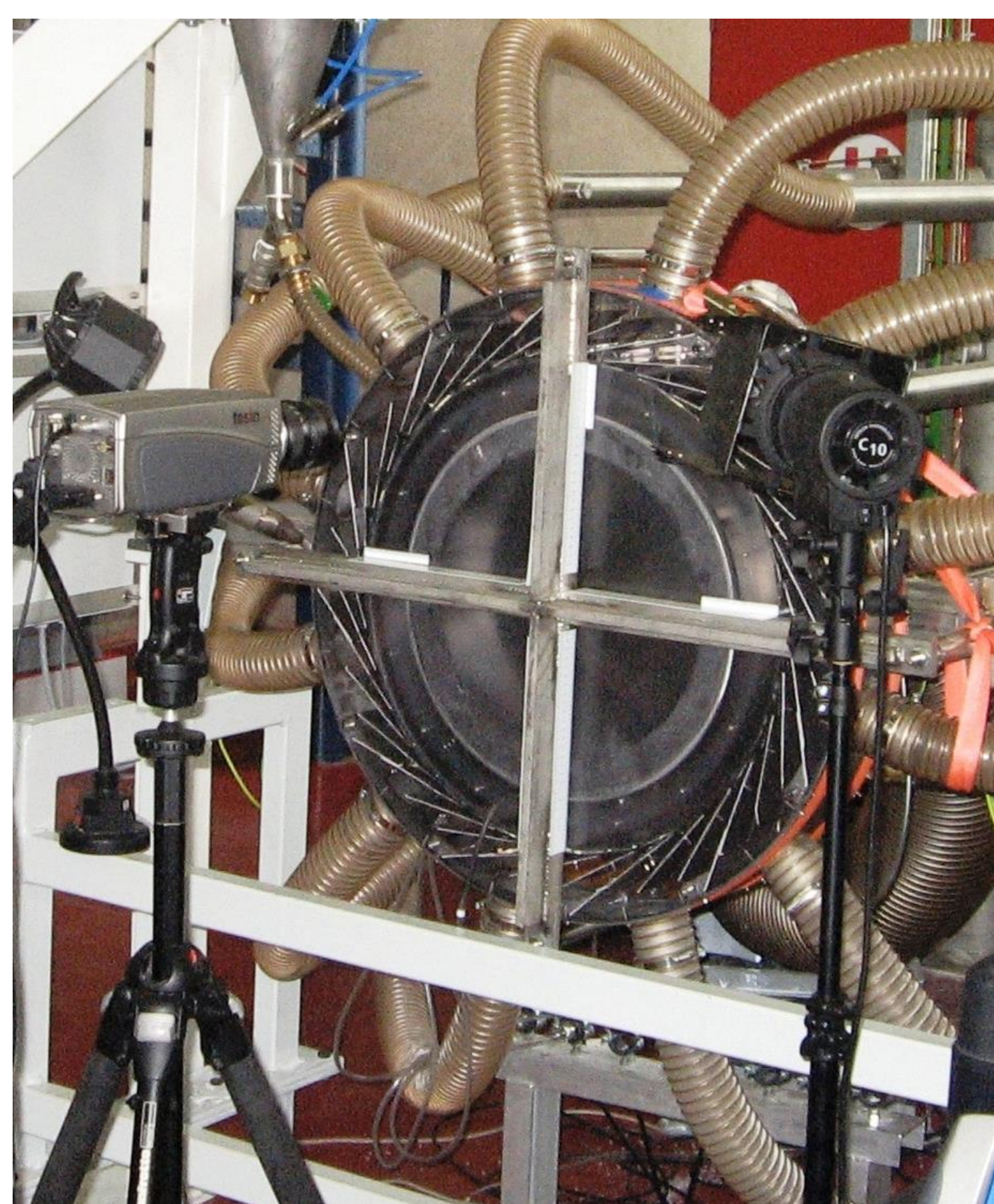


Computational Fluid Dynamics



3 gas-solid vortex reactors at the Laboratory for Chemical Technology

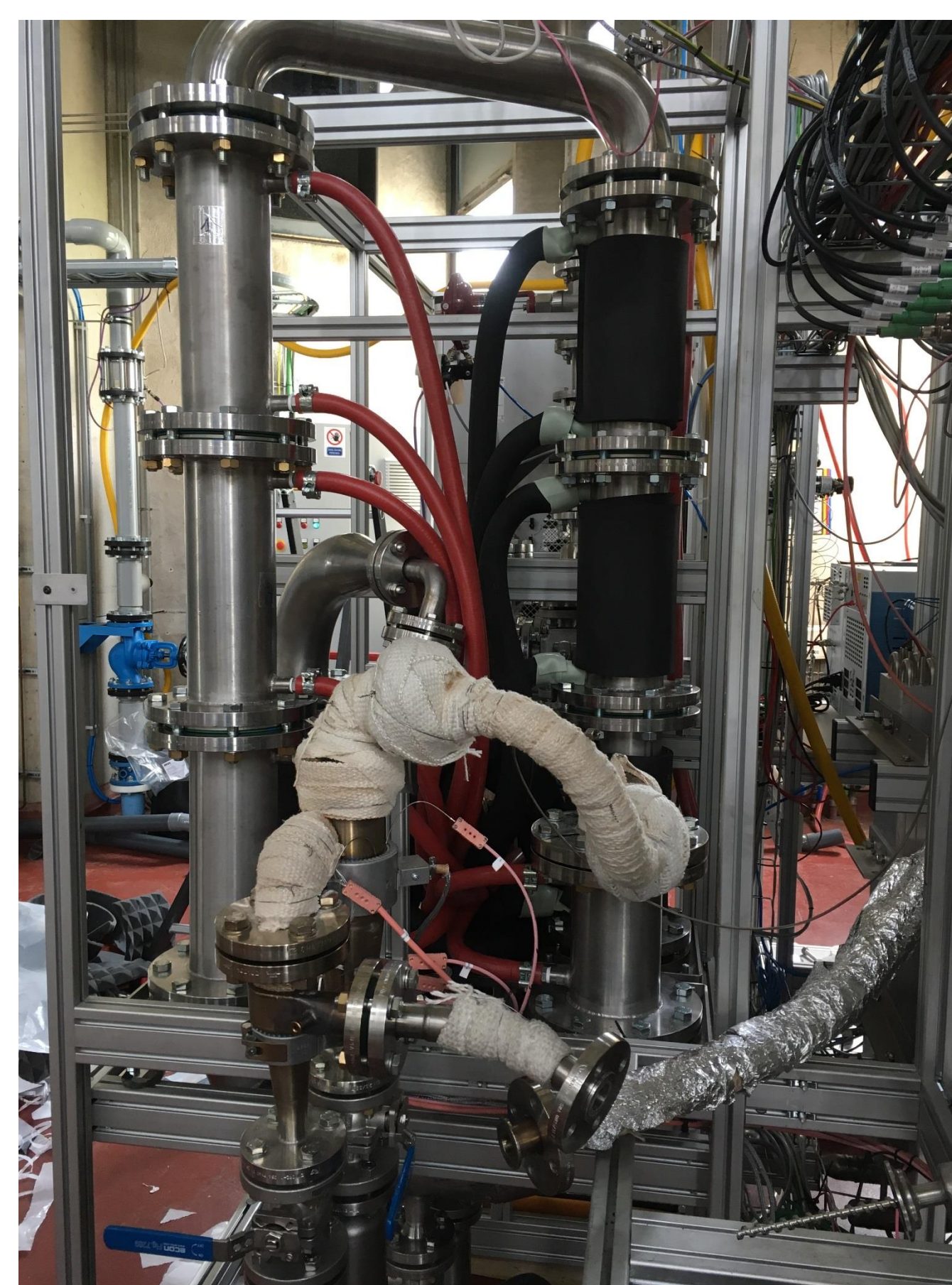
Cold flow GSVR



Hot flow GSVR



Reactive flow GSVR



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