



Seminar/Talk

From Coalescence to the Design of Leidenfrost Droplets

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Host: Scott Waitukaitis

This talk focuses on the Leidenfrost effect. First, I will present experiments investigating the collision and coalescence dynamics of drops on overheated surfaces. Drops of the same liquid practically coalesce at contact, but when drops of different liquids collide, they bounce repeatedly. This happens because the Leidenfrost effect occurs not only with the substrate, but also between the drops at the moment of collision due to the difference in boiling temperature. We call this scenario the triple Leidenfrost effect. In the second part, I will present a method for stabilizing and designing a Leidenfrost puddle: when a thin, hydrophilic layer with an appropriate design is placed on the liquid, the puddle takes on the shape of the layer due to adhesive forces, becoming stable during the whole process. The evaporation rate of the puddle increases significantly and can be modified by adjusting the dimensions of the layer, leading to a variety of potential applications. Oscillations observed in the confined liquid puddles are described as analogous to Faraday waves.

Thursday, December 11, 2025 11:00am - 12:00pm

Office Bldg West / Ground floor / Heinzl Seminar Room (I21.EG.101)



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station.

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<https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.