VIENNA COMPUTATIONAL MATERIALS LABORATORY

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TECHNISCHE UNIVERSITÄT WIEN Vienna University of Technology

## Self-assembly and phase transitions

## in self-propelled colloids

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DATE / TIME: Monday, November 30<sup>th</sup> 2015, 4:00 p.m.

LOCATION: Seminar-Raum FH gelb 09, Freihaus, TU Wien, 9. Stock gelb (formerly known as 138C)

So-called "active matter" - materials composed of building blocks that are persistently driven out of thermodynamic equilibrium by the conversion of fuel into directed motion - exhibits many phenomena that are not present in equilibrium materials. In this talk, I will give examples of how these out-of-equilibrium forces can be harnessed for achieving new self-assembly strategies of "active colloids", with potential applications both for swimming microorganisms and synthetic "microswimmers". I will furthermore show how studying relatively simple active matter model systems can help us construct novel "thermodynamic" principles for describing phase equilibria in a regime where equilibrium thermodynamics becomes invalid.

