Master Thesis

Type

Computational.

Requirements

- Programming skills (c++)
- Statistics and data analysis

QR code
zum pdf der Ausschreibung

For further information please contact:

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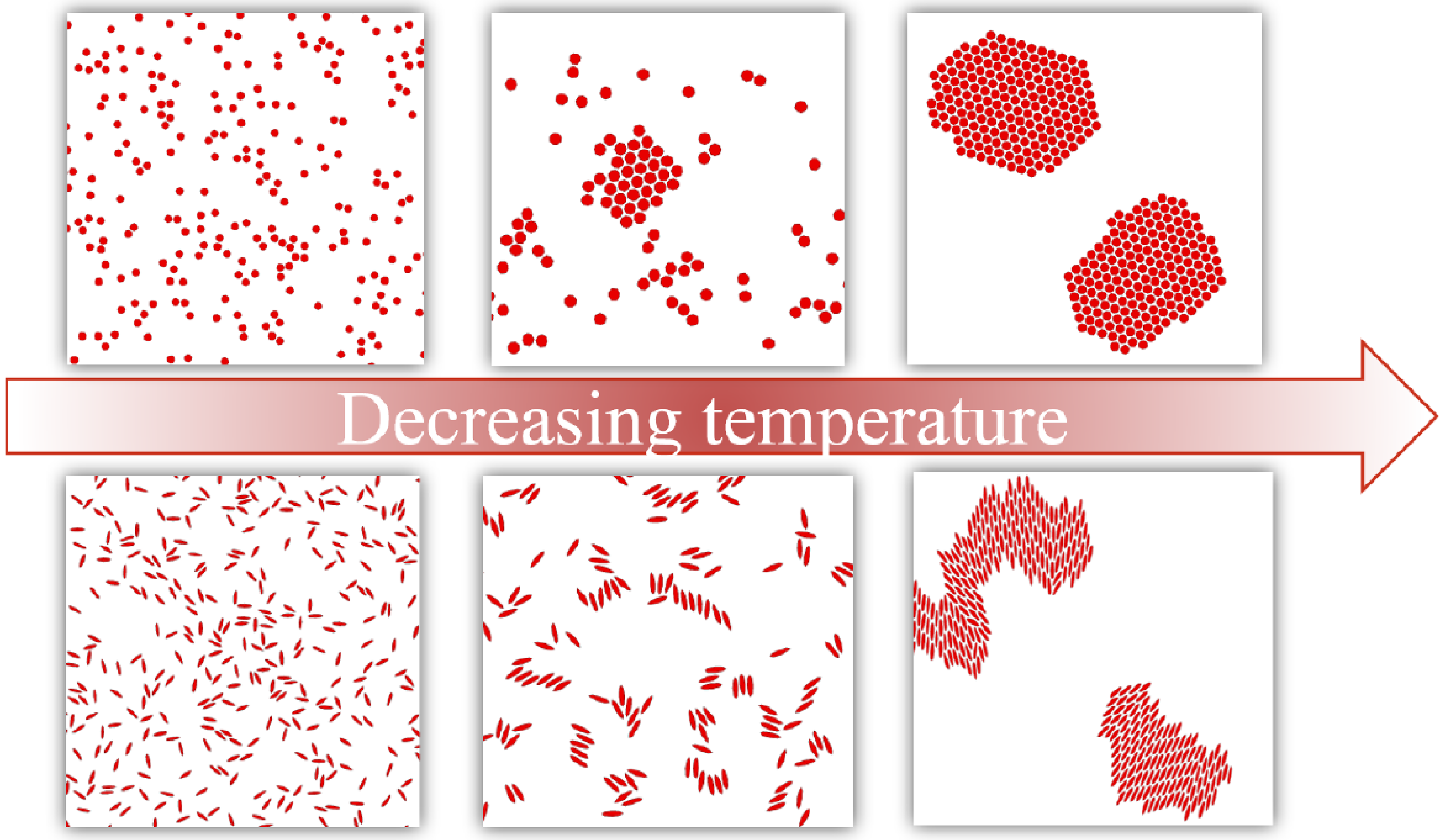
Machine-Learning assisted simulation of colloids

Background

A patterned surface has useful optical properties. For example light is scattered in different directions depending on its wavelength. Spherical colloids are useful to create patterns in a plane. Deposited on a substrate the pattern can be processed further and be exploited.
Machine-learning is treated like a solution to everything. Image and speech recognition are well known examples. Examples of scientific application are learned potentials or learned system propagation.
In this project we want use TensorFlow framework to model attractive elliptic particles. With simulations we will investigate the patterns obtained with these particles.



Aim

- Use a molecular dynamics simulation to study attractive ellipsoidal colloids.
- Investigate the relation between temperature, shape, and order.
- To describle the particle interaction create a neural network model using TensorFlow and and train it using numerical force computations.