

## **Biinspired active materials**

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Biological tissues are naturally interactive and adaptive. In general, these features are due to the action of cells that provide sensing, actuation as well as tissue remodelling. But there are also examples of materials synthesized by living organisms, such as plant seeds, which fulfil an active function without living cells working as mechanosensors and actuators. Thus the activity of these materials is based on physical principles alone, which provide inspiration for new concepts of artificial active materials. The talk will describe the underlying structural principles as well as some bio-inspired actuating planar structures [1]. Finally, the talk will present the interdisciplinary activities on active materials in the Research Cluster "Image-Knowledge-Gestaltung" of Humboldt University.

[1] An Introduction into the Physics of Self-folding Thin Structures. Lorenzo Guiducci, John W. C. Dunlop & Peter Fratzl. In Wolfgang Schäffner & Michael Friedman (eds.), *On Folding: Towards a New Field of Interdisciplinary Research*, Transcript Verlag 175 - 210 (2016).