

**Mechanical Regulation of Single Cells and Multicellular Systems
in 3D Space**
- from stimulus-responsive gels to printed metamaterials-

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Location Bayreuth: H36, NW III

Location Würzburg /Erlangen: ZOOM

ZOOM: <https://uni-bayreuth.zoom.us/j/69224332781?pwd=rXlMyCf2HwpOCaOfif465gJjPLnNGy.1>

Besprechungs-ID: 692 2433 2781

Passcode: 363884

Guests are welcome!

Prof. Dr. Thomas Scheibel

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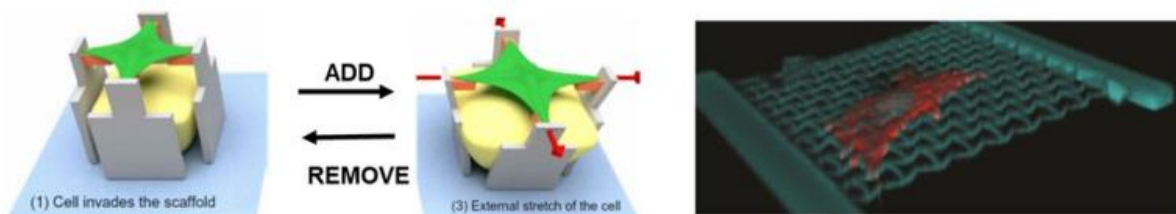
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Abstract

The mechanical properties of cellular micro-environments in vivo are highly dynamic and spatially heterogeneous. An increasing number of studies have shown that aging and diseases cause significant remodeling of extracellular matrix (ECM) either by overproduction of EMC proteins or by modulation of stiffness or directional order. Therefore, the materials that can change the structures and mechanical properties on demand have been drawing attentions in biomedical sectors. I will introduce some of our recent studies towards the design of cellular micro environments for the mechanical stimulations and regulations of single cells and multicellular systems, including (i) stimulus-responsive supramolecular hydrogels and nanofibers in 2D and 3D, (ii) fine-tunable, 2.5D micro-wrinkles, and (iii) printed mechanical metamaterials.



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