## Annual Meeting of the Swiss Physical Society 2024



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## [921] Engineering tissues with architected scaffolds

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Musculoskeletal tissues develop under the influence of dynamic mechanical loading regimes, which is reflected in the highly anisotropic organization of the tissues. In order to engineer tissue such as cartilage, tendon and muscle for use in regenerative medicine, my laboratory uses architected hydrogel scaffolds to provide relevant cell-instructive cues. Our approaches are based either on secondary annealing of microgel materials to produce macroporous scaffolds or the use of speckled laser light projected into photosensitive resin to initiate crosslinking of microfilaments. In both cases, the void space of hydrogel scaffolds provides a unique environment to the resident cells to direct engineering of living tissues.

Author:ZENOBI-WONG, Marcy (ETH Zürich)Presenter:ZENOBI-WONG, Marcy (ETH Zürich)Session Classification:Biophysics and Soft Matter

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