

Title: “Interlocking Metasurfaces: a joining technology for bio-inspired fast moving robots”

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The assembly of latch-mediated spring-actuated (LaMSA) bio-inspired robots rely heavily on traditional joining techniques (i.e., adhesives, solders, mechanical fasteners). Such joining techniques tend to lack robustness under vibration which can prevent LaMSA robots from repeatedly performing fast movements. In this talk, we present a joining technology enabled by additive manufacturing: interlocking metasurfaces (ILMs). ILMs are architected arrays of latching features that create non-permanent joints. Selected designs are fabricated at different scales and experimentally evaluated. Because of their advantages over traditional joining techniques, ILMs are promising candidates to create robust joints for fast moving small robots and other applications.

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