



STRETCHABLE PIEZOELECTRIC BIOCRYSTAL THIN FILMS

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The Invention

UW-Madison researchers have developed an amino acid-based piezoelectric biocrystal thin film that offers tissue-compatible omnidirectional stretchability with unimpaired piezoelectricity. The stretchability was enabled by a truss-like microstructure that was self-assembled under controlled molecule-solvent interaction and interface tension. Through the open and close of truss meshes, this large scale biocrystal microstructure was able to endure up to 40% tensile strain along different directions while retaining both structural integrity and piezoelectric performance. Built on this structure, a tissue-compatible stretchable piezoelectric nanogenerator was developed, which could conform to various tissue surfaces, and exhibited stable functions under multidimensional large strains. This work presents a promising solution that integrates piezoelectricity, stretchability, and biocompatibility in one material system, a critical step toward tissue-compatible biomedical devices.

Additional Information

For More Information About the Inventors

- [Xudong Wang](#)

Tech Fields

- [Materials & Chemicals : Biochemicals & biomaterials](#)

For current licensing status, please contact Michael Carey at mcarey@warf.org or 608-960-9867