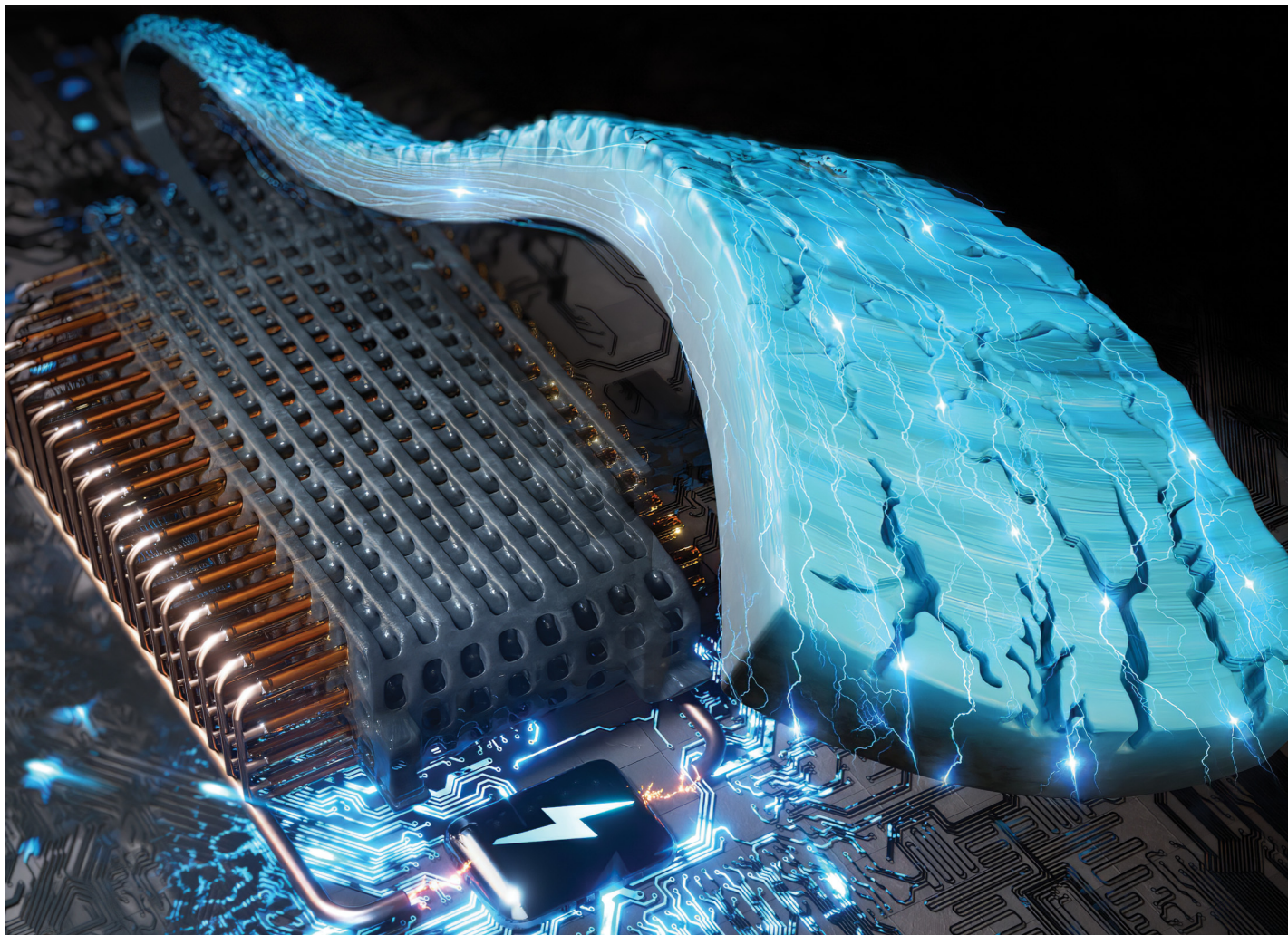




Showcasing research from the laboratories of Professor Yang-Kyu Choi and Professor Sung Gap Im at the Korea Advanced Institute of Science and Technology, Daejeon, South Korea.

Synthesis of stretchable triboelectric material with strain-compensating ability using gradient interpenetrating polymer networks

Herein, an elastic triboelectric material was synthesized by employing a gradient interpenetrating polymer network (g-IPN) to overcome the limitations of existing elastic triboelectric materials. A sub-micron thick g-IPN was formed on a host elastomer (Ecoflex-CNT) using a highly chargeable guest polymer (pVP), resulting in strain-insensitive and synergistically enhanced output performance while preserving the superior mechanical properties of the host elastomer. Utilizing this strategy, a three-dimensional (3D)-structured elastic TENG was fabricated, exhibiting a record-high output of 267.2 mC m^{-3} among TENGs based on contact electrification between solids.

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