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Wearable Electronic Skin based on Triboelectric and Luminescent Effect for Pressure and Tensile Sensing

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Electronic skin (E-skin) as the medium between ambient environment and bionic robots is an advanced technology that provides an electronic readout or even produces a visualized response that can be easily captured for postprocessing. Since this concept birth, different electronic skins have been fabricated and utilized for various sensing applications, such as pressure, humidity, temperature et al. However, to mimic human skin better, combining more sensing capabilities into one E-skin system is highly in demand.
Here, we envisioned a new type of wearable E-skin system based on triboelectric and luminescent effect for both pressure and tensile sensing. This device consists of a triboelectric nanogenerator as a pressure sensor and a luminescent layer realized by CdSe/CdS quantum rods for tensile sensing.

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