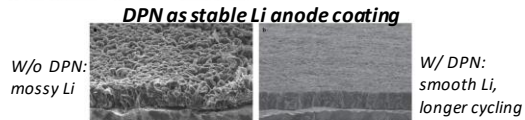
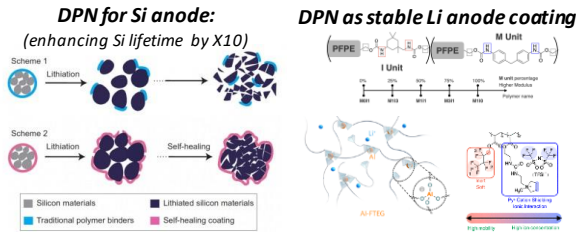


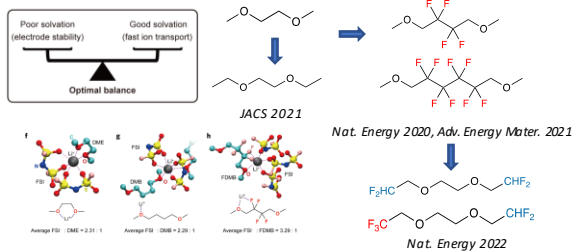
## Energy Storage

### 1. Dynamic polymer network (DPN) for battery

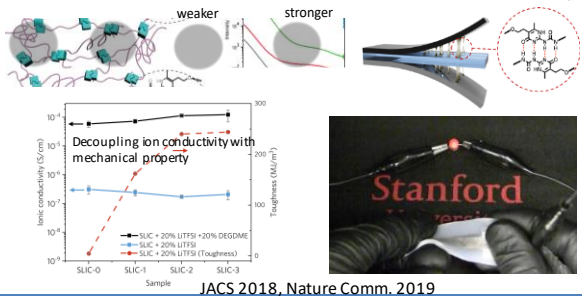


Nat. Chem. 2013; Adv. Energy Mater., 2015, JACS 2018, Nature Mater. Rev. 2019, Joule 2019

### 2. High-performance liquid electrolytes



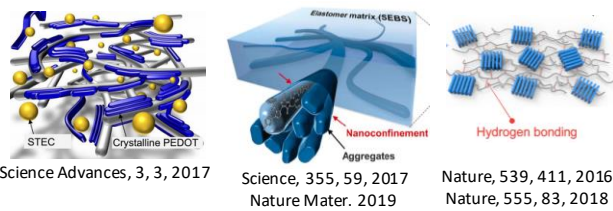
### 3. Recyclable, stretchable solid-state battery



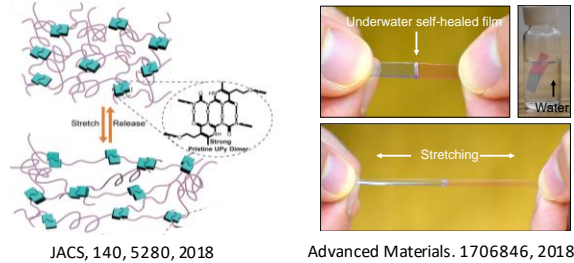
## Skin-inspired Electronics

### Skin-inspired Materials

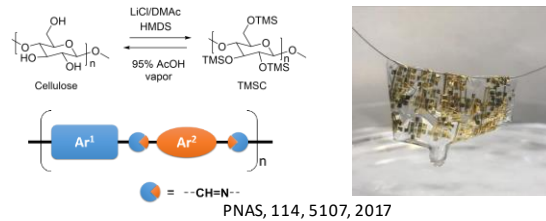
#### 1. Stretchable conductors, semiconductors



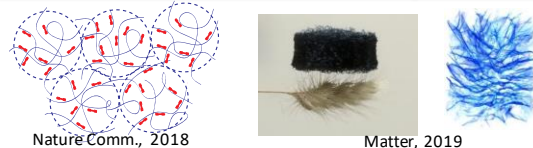
#### 2. Self-healing, tough



#### 3. Biodegradable, transient



#### 4. Tissue-level modulus conducting materials



### Skin-inspired Devices and Applications

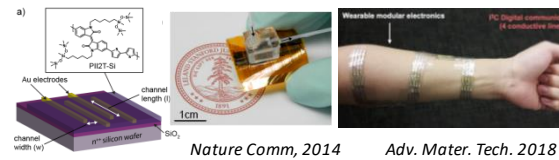
#### 1. Skin-inspired pressure, strain, shear sensor



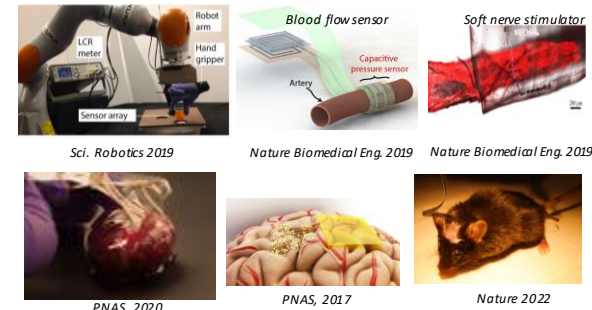
#### 2. E-skin circuits, sensors and displays



#### 3. Wearable Chemical and Biological Sensors

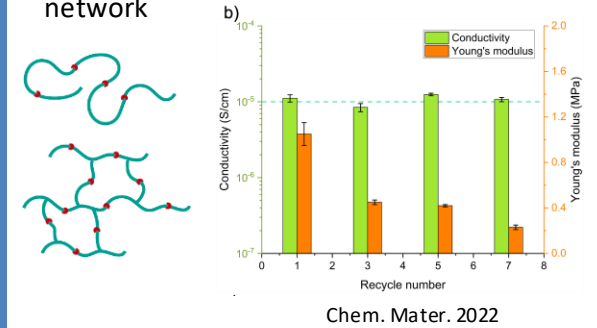
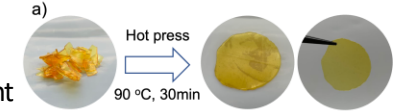


#### 4. Robotic, implantable, neuro-interface



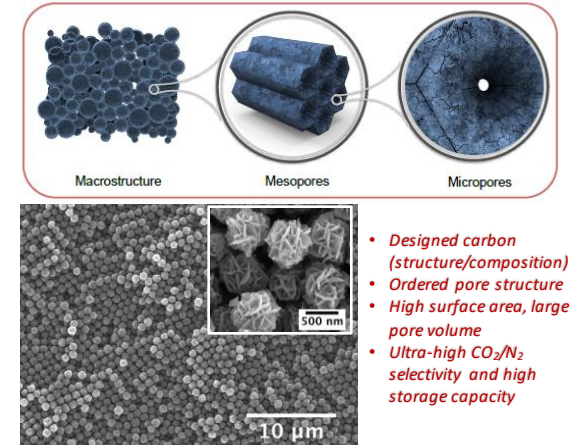
## Recyclable, re-processable functional materials

Dynamic covalent & non-covalent network



## Porous carbon materials

energy storage, electrocatalysis, CO<sub>2</sub> absorption



- Designed carbon (structure/composition)
- Ordered pore structure
- High surface area, large pore volume
- Ultra-high CO<sub>2</sub>/N<sub>2</sub> selectivity and high storage capacity

(Ref: ACS Central Science 2015, JACS 2017, JACS 2018)