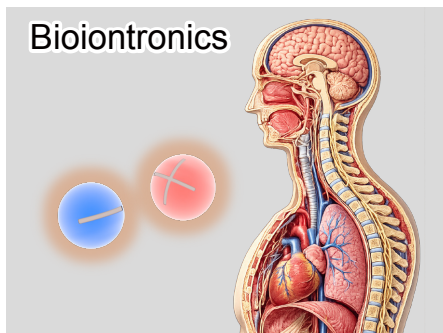


Bioiontronics

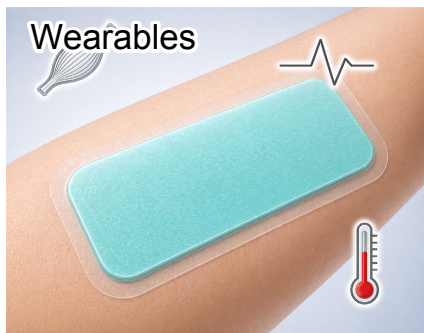
Translating ionic devices into healthcare, wearables, and transient electronics.

Bioiontronics

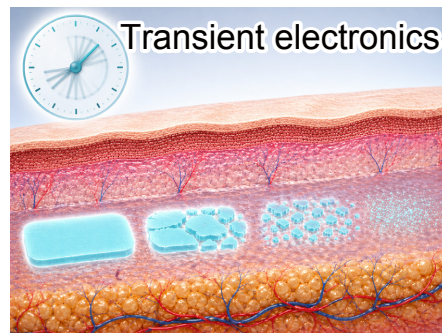


Adapted from Ref. 4 (CC BY 4.0)

Wearables



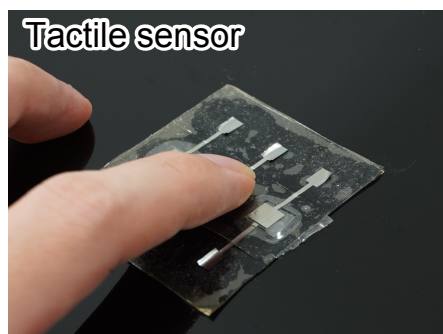
Transient electronics



Soft Ionic Devices

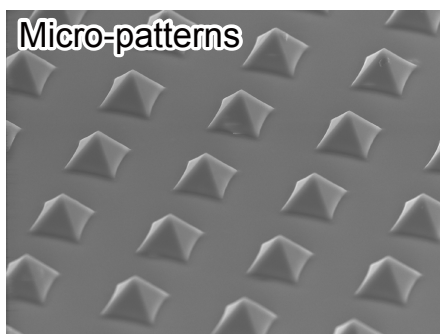
Creating bioelectronic devices enabled by functional ionic materials.

Tactile sensor



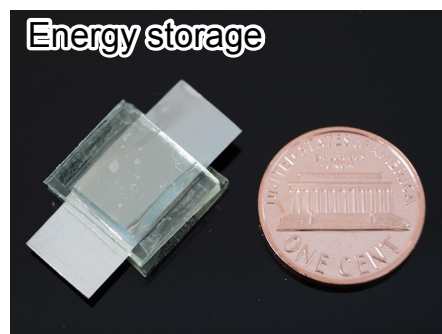
Adapted from Ref. 1 (CC BY 4.0)

Micro-patterns



Adapted from Ref. 1 (CC BY 4.0)

Energy storage



Adapted from Ref. 2 (CC BY 4.0)

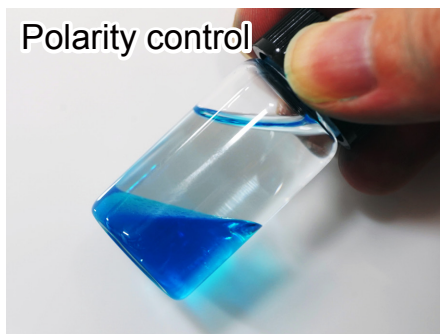
Functional Ionic Materials

Engineering ionic materials through molecular design.

Self-healing

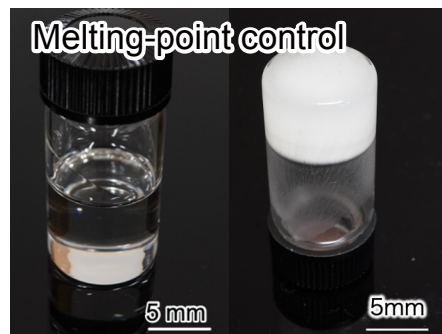


Polarity control



Adapted from Ref. 3 (CC BY 4.0)

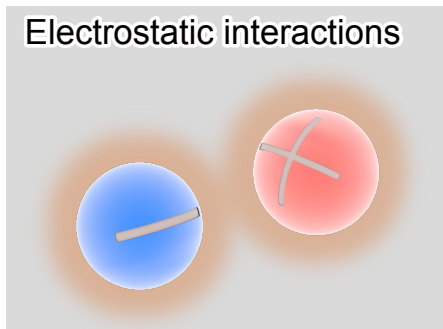
Melting-point control



Intermolecular Interaction Design

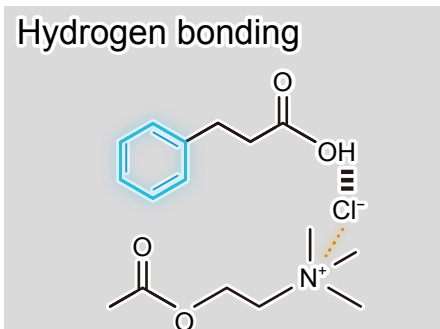
Programming material properties through molecular interactions.

Electrostatic interactions



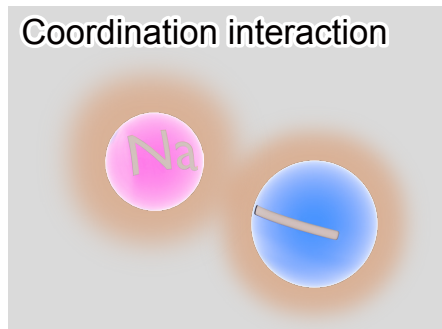
Adapted from Ref. 4 (CC BY 4.0)

Hydrogen bonding



Adapted from Ref. 3 (CC BY 4.0)

Coordination interaction



Adapted from Ref. 4 (CC BY 4.0)

- [1] S. Yamada, M. S. Al Farisi, M. Kumemura, A. Hermawan, and T. Honda, ACS Materials Au, vol. 5, no. 6, pp. 1029–1036, 2025.
[2] S. Yamada, M. S. Al Farisi, M. Kumemura, A. Hermawan, and T. Honda, ACS Applied Materials & Interfaces, vol. 16, no. 12, pp. 14759–14769, 2024.
[3] S. Yamada and T. Honda, ACS Materials Au, 2026.
[4] S. Yamada and T. Honda, ACS Applied Materials & Interfaces, vol. 17, no. 35, pp. 40845–40854, 2025.