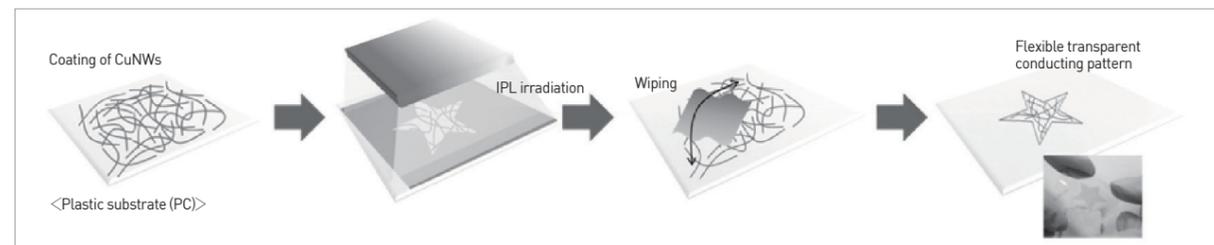


## Eco-friendly, Fast Patterning Technology of Highly-flexible Transparent Electrode

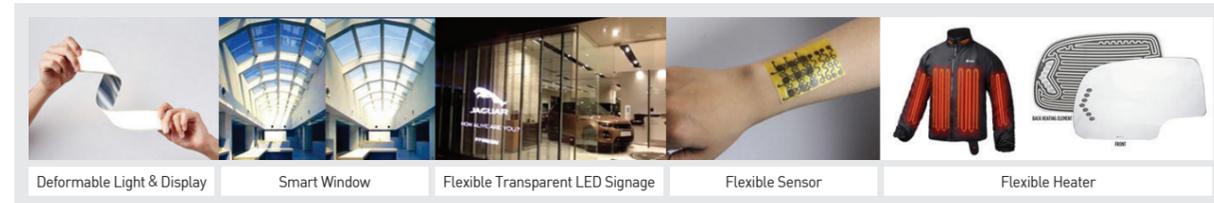
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⇒ Fast and eco-friendly process and system technology to produce highly flexible metal (transparent) electrode pattern with simple 3 stages (coating → selective light radiation → wiping)



### Client / Market

- Deformable light & display, Smart window, Flexible transparent LED signage, Flexible heater, Flexible sensor



### Necessity of this Technology

- Requiring expensive infrastructure such as exposure tool
- Complex patterning process, large amount of chemical waste (PR/etching solution/developing solution, etc.) and difficulty to apply fast and scalable (roll-to-roll) process
- Difficult to use metal materials that can easily be oxidized (generally requires vacuum condition or nitrogen or argon gas atmosphere)
- Issues regarding high surface roughness, low adhesion on the substrate, low flexibility

### Technical Differentiation

- This system and process can produce highly flexible (transparent) electrode patterns with high-speed and eco-friendly simple 3 stages without expensive facilities.
- High adhesion on the substrate, low surface roughness can be developed and metal vulnerable to oxidization in the air can be available

### DESIRED PARTNERSHIP

Technology Transfer

Licensing

Joint Research

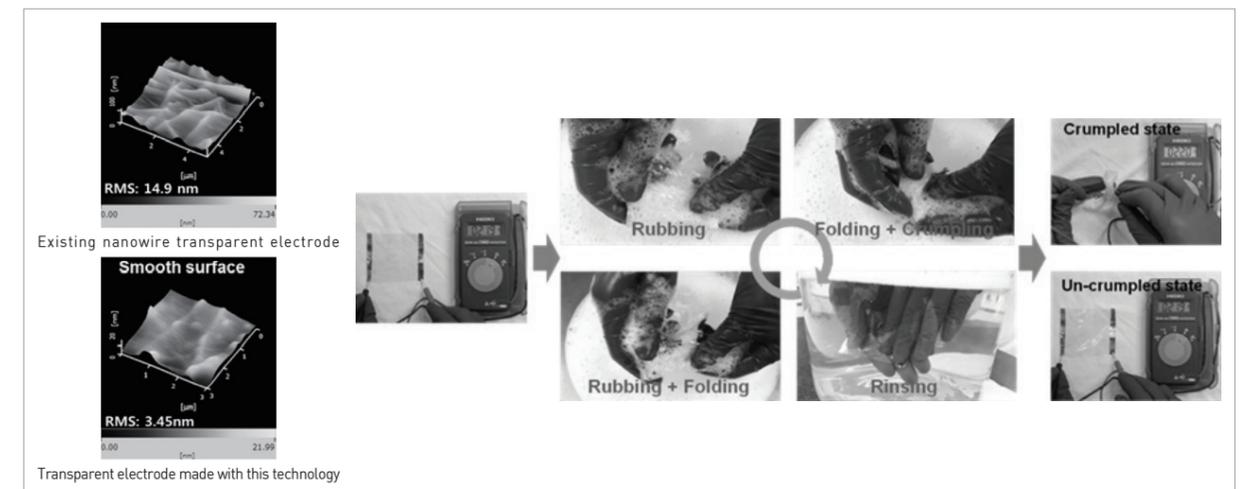
Other



### TECHNOLOGY READINESS LEVEL [TRL]



### Excellence of Technology



### Current Intellectual Property Right Status

#### PATENT

- Patterning Process Using Photo Sintering on Flexible Substrate (KR1704693)
- System for Conductive Pattern Forming by Light Irradiation on Conductive Metal Ink-Coated Plate (KR1773148)
- Roll-to-Roll Patterning System (KR1821766)
- 5 related domestic, international patents applied

#### KNOW-HOW

- Large quantity synthesis and refinement technology for metal nano structure (0D, 1D)
- Fabrication of highly dispersed nano conductive ink
- Electrical, mechanical, optical property evaluation technology for printed and flexible film
- Low temperature photo sintering process for various thin films