

## Advanced patterning techniques for wearable electronic/optoelectronic devices

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Wearable soft-electronic devices, in particular healthcare-related ones, have been intensively studied over the past decade due to their unique advantages in biomedical applications over the conventional rigid electronics, including conformal contacts on human skin and high deformability that minimizes unwanted inflammatory responses. Here, we describe 3 types of advanced patterning techniques for the wearable electronic/optoelectronic devices. Alignment of red-green-blue micro pixels for high resolution quantum dot LEDs was developed by intaglio transfer printing. A thermally controlled transfer printing method that is specially designed for the multiple aligned transfer of patterned graphene is developed for transparent all-graphene based electronics. Finally, biomimetic miniaturized suction cups are designed for the patient-friendly, dry adhesives of smart medical skin.