

## Laser-Based Fabrication of Metal Nanocomposites on Flexible Substrates

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**Categories:**

- Electrical Engineering
- Materials and Manufacturing

**Keywords:**

- Carbon Nanotubes
- Composites
- Electrical Engineering
- Electronics
- Materials and Manufacturing
- Metals
- Microfabrication
- Nanocomposites
- Sensors
- Wearable Electronics

Flexible electronics have many advantages including providing weight savings, good portability, and ease of integration with other devices. There are many potential applications and the market for flexible electronics is forecast to grow nearly 10 times to \$50 billion by 2020. Unfortunately, these devices are subject to repeated stress, which often leads to damage and cracks. There exists a need to enhance the reliability and durability of the metal components in flexible electronics.

A Purdue University researcher has developed a process for fabricating CNT metal nanocomposites onto flexible substrates. This technology eliminates the need for costly masks or vacuums during the fabrication process and is suitable with a variety of metals including gold, silver, and copper. In addition, this technology enhances the durability and reliability of flexible electronics without degrading electrical properties.

**Advantages:**

- Cost effective
- Provides high spatial resolution
- Produces little thermal effect to the flexible substrate and other surrounding regions

**Potential Applications:**

- Sensors

- Wearable electronics
- Solar cells
- Flexible displays

**People:**

- Wu, Benxin (Project leader)

**Intellectual Property:**

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**Country of Filing:** United States

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**Contact OTC:**

Purdue Office of Technology Commercialization  
The Convergence Center  
101 Foundry Drive, Suite 2500  
West Lafayette, IN 47906

Phone: (765) 588-3475

Fax: (765) 463-3486

Email: [otcip@prf.org](mailto:otcip@prf.org)