

# Carbon Nanotube Power Converters and Inverters

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## Status:

Seeking R&D and/or  
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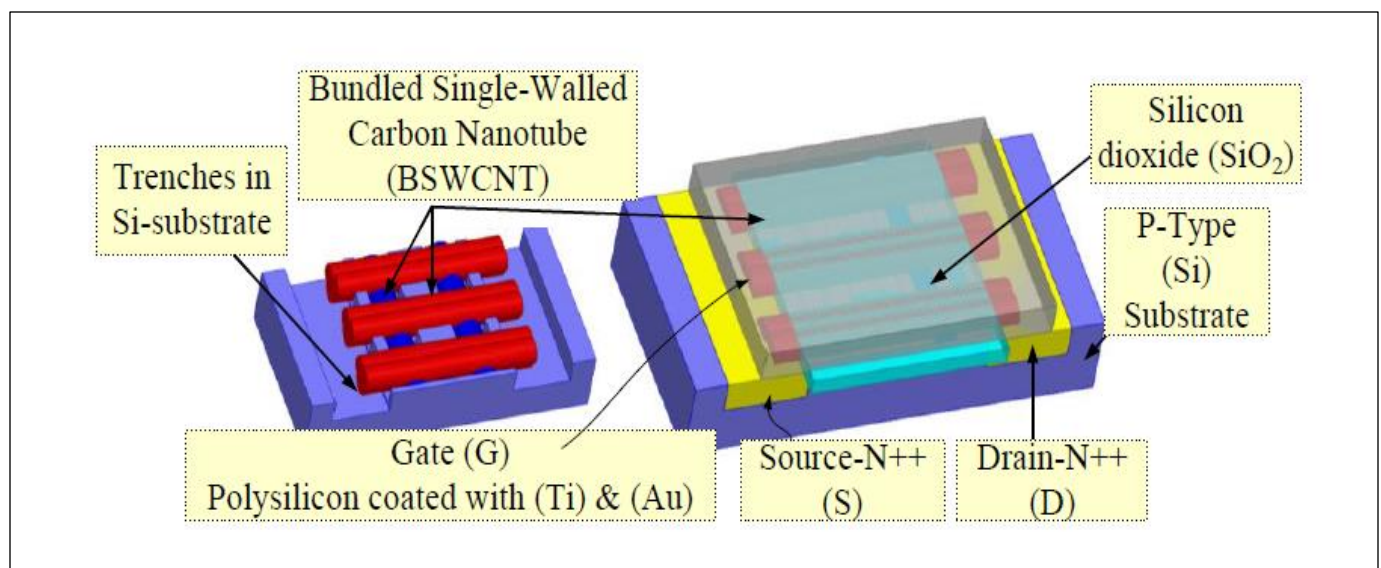
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## Carbon Nanotube Power Converters

- High density and efficient power converter made of carbon nanotubes (CNT)
- Consists of one or more switching transistors, power inductors, capacitors, power transformers, and power connections/wires
- All devices are made and connected by CNT's
- Applicable to DC-AC, AC-DC, and DC-DC power converters

## Advantages of CNT Power Converters

- Electromigration is a large reliability issue with small dimensions and copper interconnections
- CNT made power converters can improve the overall interconnectivity by reducing bond density
- Additionally, CNT power converters reduce the overall resistance of the converter due to the reduction of copper nodes within the integration process



**Figure 1.** 3D bundled single-walled CNT based power converter

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