The Office of Technology Management

UNIVERSITY OF TEXAS ARLINGTON

Tech ID: UTA 13-34

Ultra-low Power Dissipation transistor

INVENTOR: Dr. Seong Jin Koh

TECHNOLOGY NEED

As electronics devices get ever more sophisticated in their functionality, the challenges of producing energy-efficient devices are increasing. Two of the biggest challenges are to reduce the power consumption and the loss of energy due to heating. Especially in mobile electronic devices, the design is often limited by the large battery packs that are necessary to power the devices.

INVENTION DESCRIPTION/SOLUTION

Researchers here at UTA have developed a novel cold electron transistor that drastically reduces the amount of energy required by the transistor to perform similar to conventional transistors. As this novel transistor reduces the power consumption, devices may run cooler and smaller battery packs may now power the same electronic devices. It also reduces the power dissipation by a factor of 100.

APPLICATIONS

- Electronic Devices with processors (Desktops, Laptops, Tablets, Smart Phones, Workstations)
- Military Electronic devices
- Other Electronic and Electric Devices

KEY BENEFITS

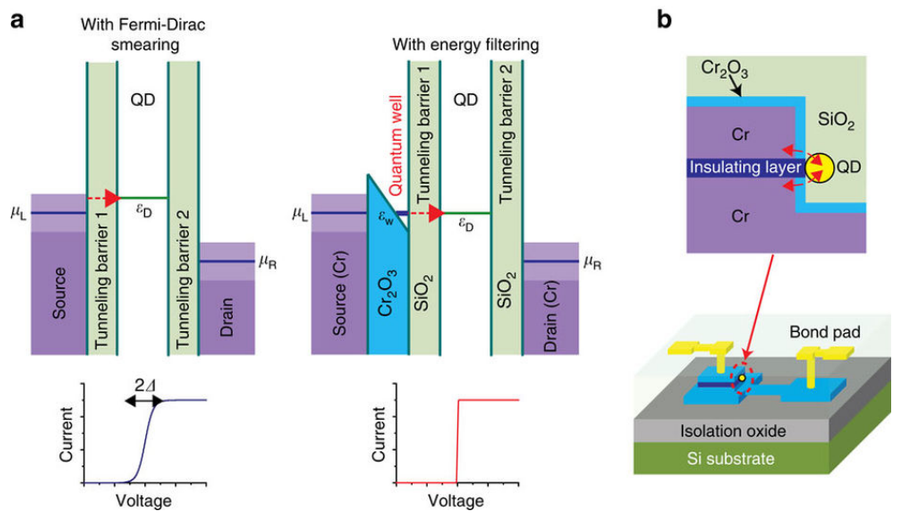
- Decreased Power consumption
- Increased Battery Life
- Reduced Heat Generation

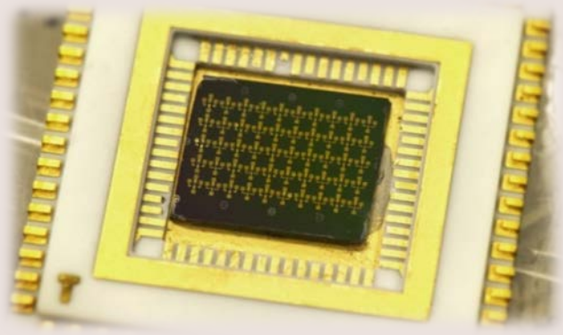
STAGE OF DEVELOPMENT

- Prototyped and tested

INTELLECTUAL PROPERTY STATUS

- US Granted Patent **US9704977 B2**
- Patent Pending (China, Europe, Japan & Korea)





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