In summary, we have created a nano-memristor by laser inducing a defect in suspended carbon nanotube devices. The energy of the defect state can be altered by the bias voltage. Thus, making nanotube devices promising candidates for future electronic interconnects or high frequency transistors.

References:

Summary and References

In summary, we have created a nano-memristor by laser inducing a defect in suspended carbon nanotube device. The energy of the defect state can be altered by the bias voltage. Also, the microwave properties of carbon nanotube field effect transistor have been investigated and it is found that suspended nanotubes have higher RF conductance compared to DC conductance. Finally, we identify the origin of a sudden drop in current, which is found to strongly depend on the gate voltage and the type of gas surrounding the suspended nanotube. However, by subtracting the low bias resistance of the nanotube and using the ballistic nature in pristine ultra-clean nanotubes, the kink is found to be the threshold of the optical phonon emission at high bias voltage. Thus, making nanotube devices promising candidates for future electronic interconnects or high frequency transistors.

References: