Resistance-Switchable Graphene Oxide–Polymer Nanocomposites for Molecular Electronics

What aspects of this project do you find most exciting?
With the huge treasure trove of electroactive polymers and the pseudo two-dimensional nature of graphene, the electronic properties of polymer-functionalized graphene-oxide nano-sheets can be fine-tuned through a design-cum-synthesis strategy to optimize the performance of resistive random-access memories.

What new scientific questions/problems does this work raise?
Advanced technology should be developed to trace direct physical evidence for the verification of the charge-transfer-based switching mechanism.

What future opportunities do you see in light of the results presented in this paper?
Flexible and transparent molecular memristors can be made possible with graphene, to mimic the learning and logic processing functionalities of human brains.

How was the collaboration on this project initiated?
Collaboration between the groups of Prof. Dr. Yu Chen and Prof. Dr. En-Tang Kang began in 2008, when we started to investigate the use of polymer-functionalized graphene for memory applications. After Prof. Dr. Gang Liu returned to China and joined Prof. Dr. Run-Wei Li’s group, the collaboration became more energetic and more solid.

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