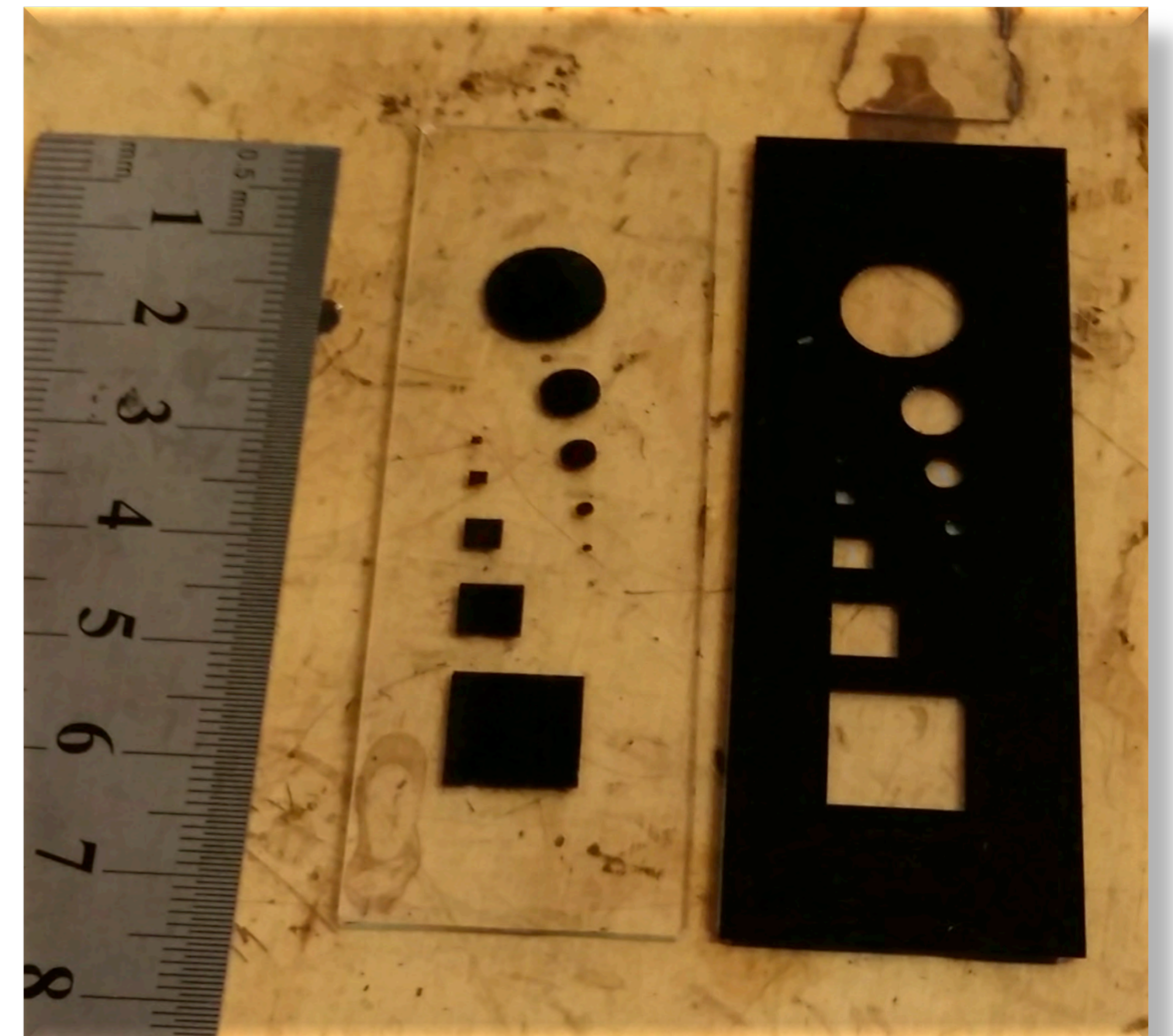
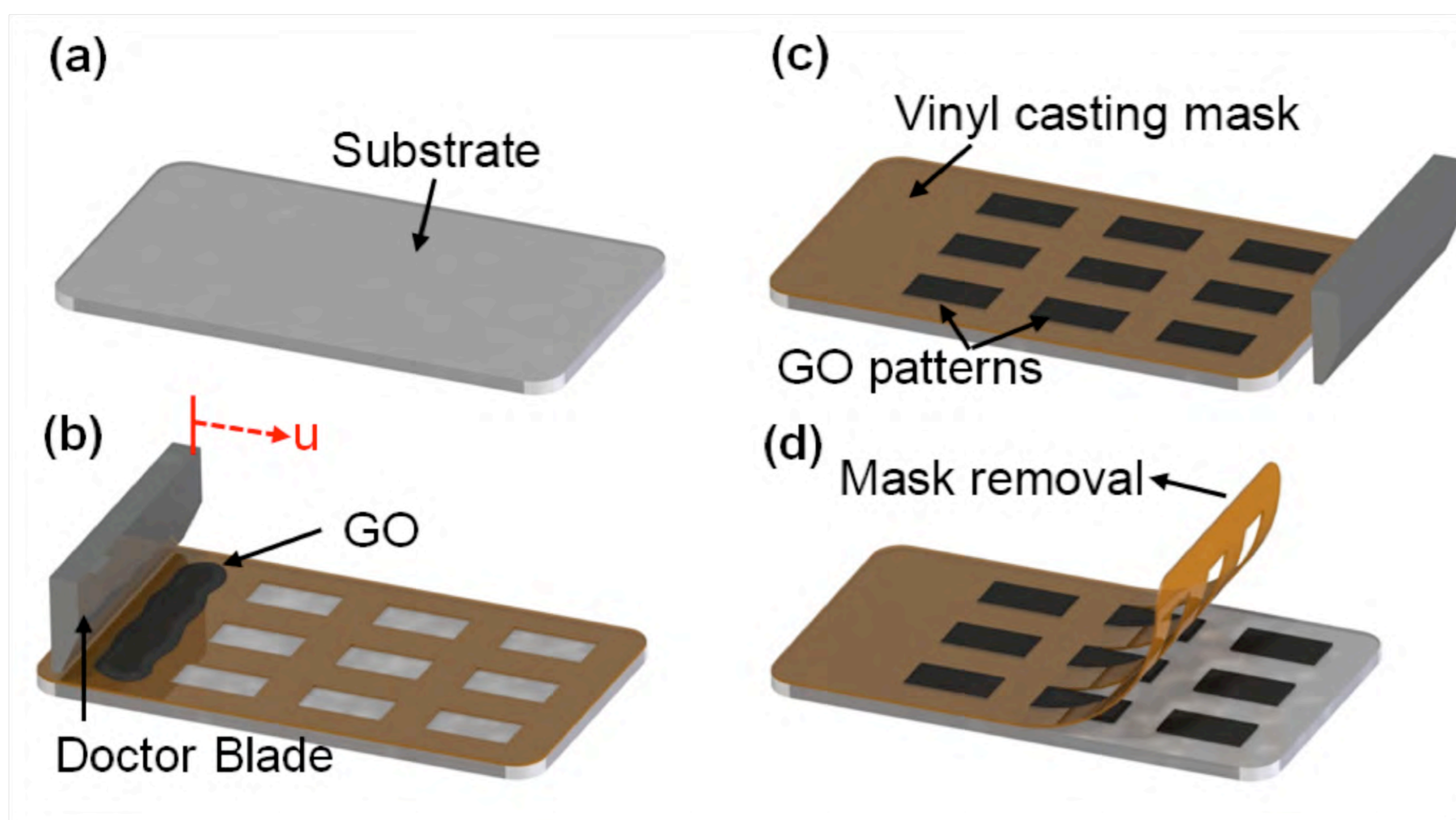


Ultra-thin, Conductive Graphene Screen Printing



Lead Scientist

Samuel T. Martin

Research Expertise

- Using industrially scalable techniques, we can “screen print” graphene oxide (GO) patterns that are highly compact, highly ordered and thin; about 3-5 μ m.
- We can produce films that are conductive using a variety of reduction techniques.
- We can deposit the films on a wide array of substrates, including flexible ones.

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Applications

- The interstices in these films have unique nano-fluidic properties that may be used to make ion diodes which mimic the properties of biological cells
- Our conductive, patterned films may also be applied as a novel strain sensor for use in a wide range of civil, materials and mechanical engineering applications
- We can also create interdigitated designs for the development of super-capacitor designs for use in energy storage applications
- We can also locate patterns on pre-patterned substrates to create micro-electrode arrays and interface with circuits for application in advanced electronics.

Research Facilities

- To achieve this we use an inexpensive graphic design vinyl cutter which prepares the masks onto which the GO is cast
- We characterise the patterned film using both optical and electron microscopy
- To study the GO material itself we use infrared spectroscopy and extensive rheological testing
- Once a device is prepared, we study it using a range of techniques:
Electrochemical studies on a potentiostat, low current measurements using a source measurement unit, etc.