

Water Activated Graphene Oxide Transfer Using Wax Printed Membranes for Fast Patterning of a Touch Sensitive Device

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Printed electronics paved the way to a new type of low cost technologies over plastics and organic substrates for building electrical and electronic devices. We demonstrate a graphene oxide printing technology using wax printed membranes for the fast patterning and water activation transfer using pressure based mechanisms. The wax printed membranes have 50 μm resolution, longtime stability and infinite shaping capability. The use of these membranes complemented with the vacuum filtration of graphene oxide provides the control over the thickness. Our demonstration provides a solvent free methodology for printing graphene oxide devices in all shapes and all substrates using the roll-to-roll automatized mechanism present in the wax printing machine. Graphene oxide was transferred over a wide variety of substrates as textile or PET in between others. Finally we developed a touch switch sensing device integrated in a LED electronic circuit.

References

[1] Luis Baptista-Pires, Carmen C. Mayorga-Martínez, Mariana Medina-Sánchez, Helena Montón and Arben Merkoçi; ACS Nano; December 2015. DOI: 10.1021/acsnano.5b05963.

Figures

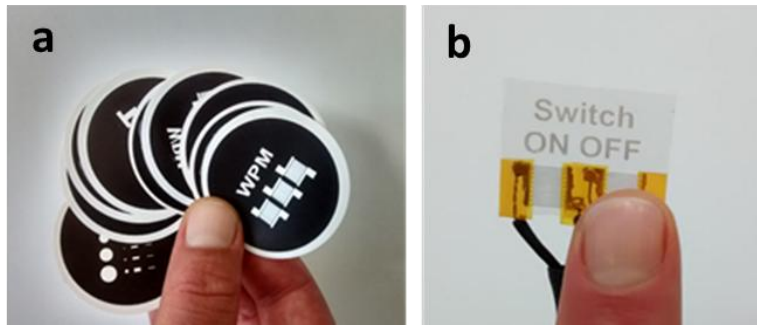


Figure 1. a) Wax printed membranes used for patterning graphene oxide. b) Platform used for switching ON and OFF a LED.