Multifunctional Graphene Microarchitectures by Iterative Solution-Phase Laser Writing

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The chemical patterning of graphene *via* covalent functionalization has proven to be a viable tool for strategically modifying the physical, electronical and chemical properties of the two-dimensional material.[1] In this field, laser-induced covalent functionalization of graphene with radical precursor molecules has emerged as a facile yet precise and selective approach and necessitates a solid-state coating of the reactant. A recently proposed method involves the laser-induced covalent functionalization of graphene in solution-phase, investigating the influence of multiple variables for this approach.[2] We expanded the proposed Solution-Phase Laser Writing (SPLW) procedure to encompass a wider variety of precursor molecules and we established the ability for an iterative SPLW procedure that incorporates multiple chemically distinct addends in a stepwise process.[3]

References

[1] T. Wei, F. Frank, A. Hirsch, Adv. Mater., 33 (2021), 2104060
[2] K. Gerein, B. Cress, J. Maultzsch, A. Hirsch, F. Hauke, submitted
[3] B. Cress, A. Hirsch, F. Hauke, manuscript in preparation

Figures

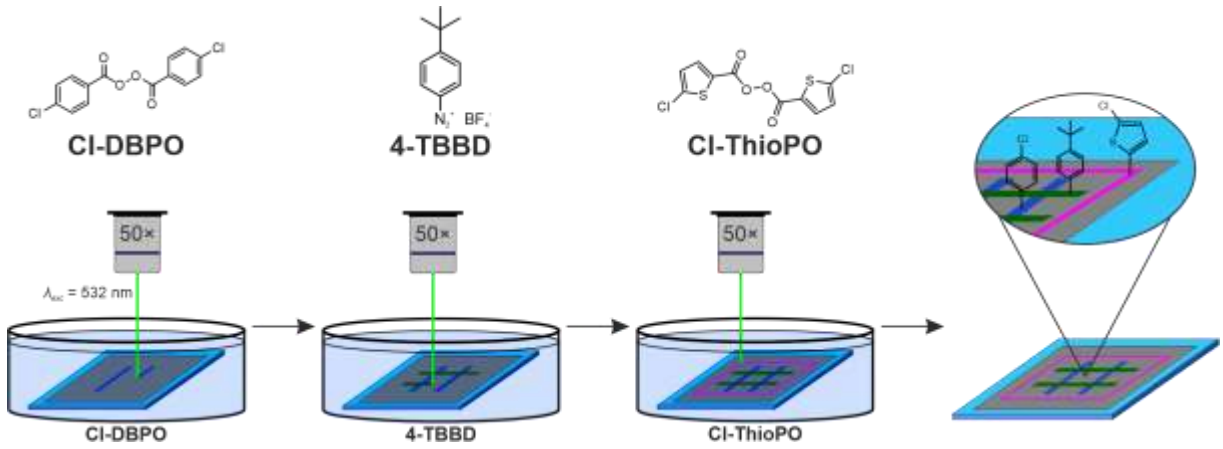

Figure 1: Schematic representation of the iterative SPLW procedure generating a functionalized graphene sample with chemically distinct addends.