

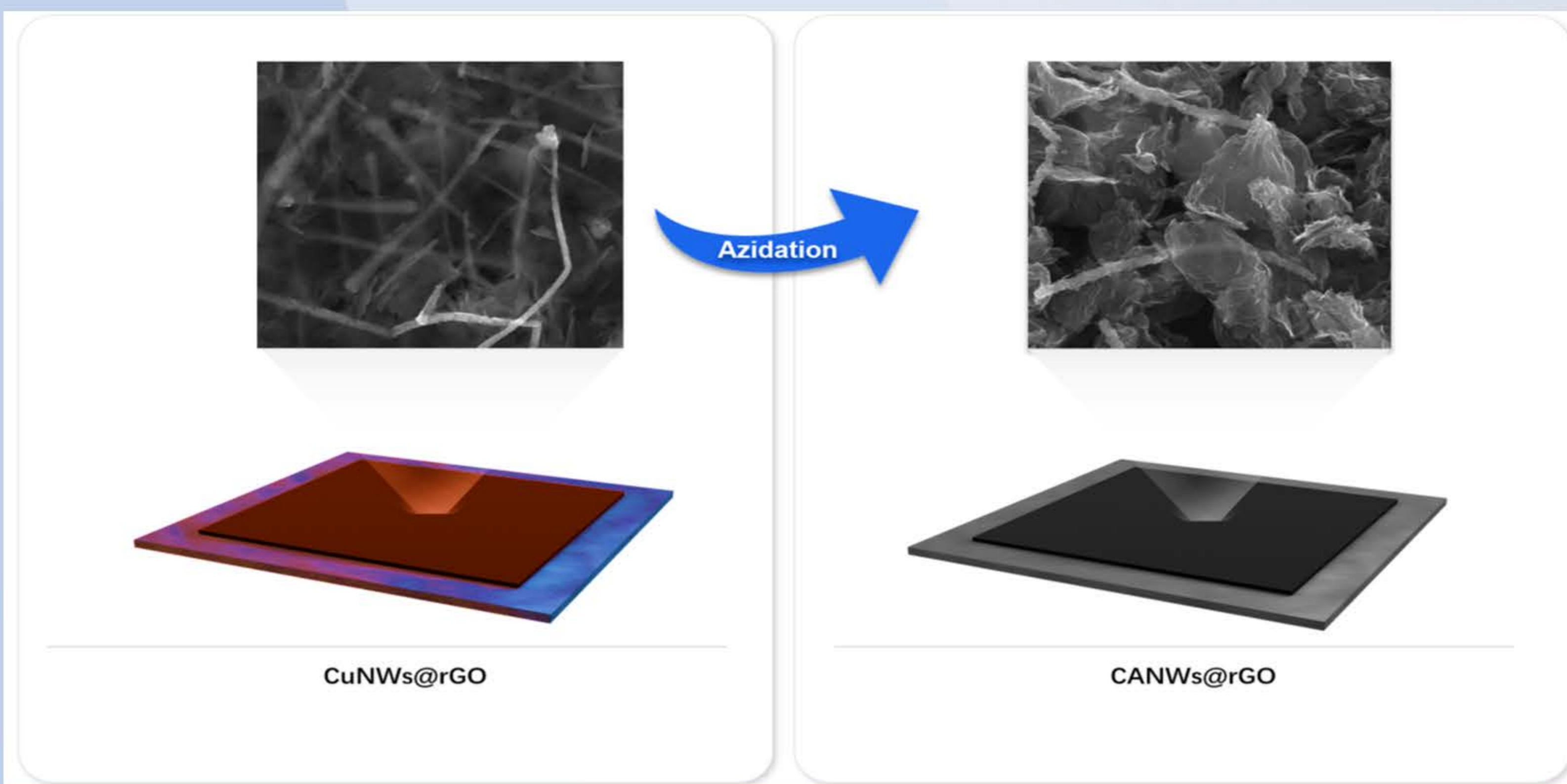
# Copper Azide Nanowires@rGO Energetic Composite with Low Electrostatic Sensitivity

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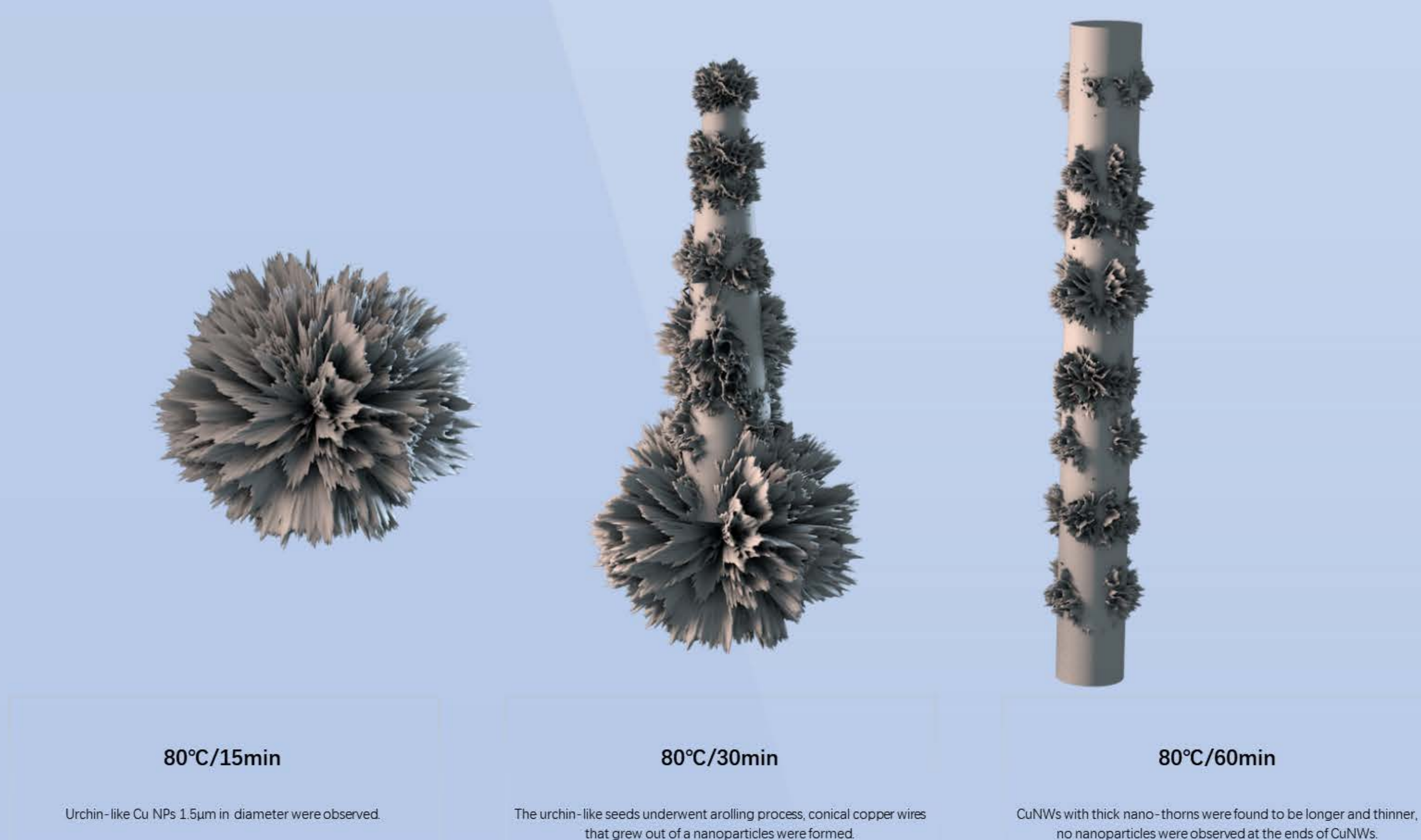
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## ABSTRACT&INTRODUCTION

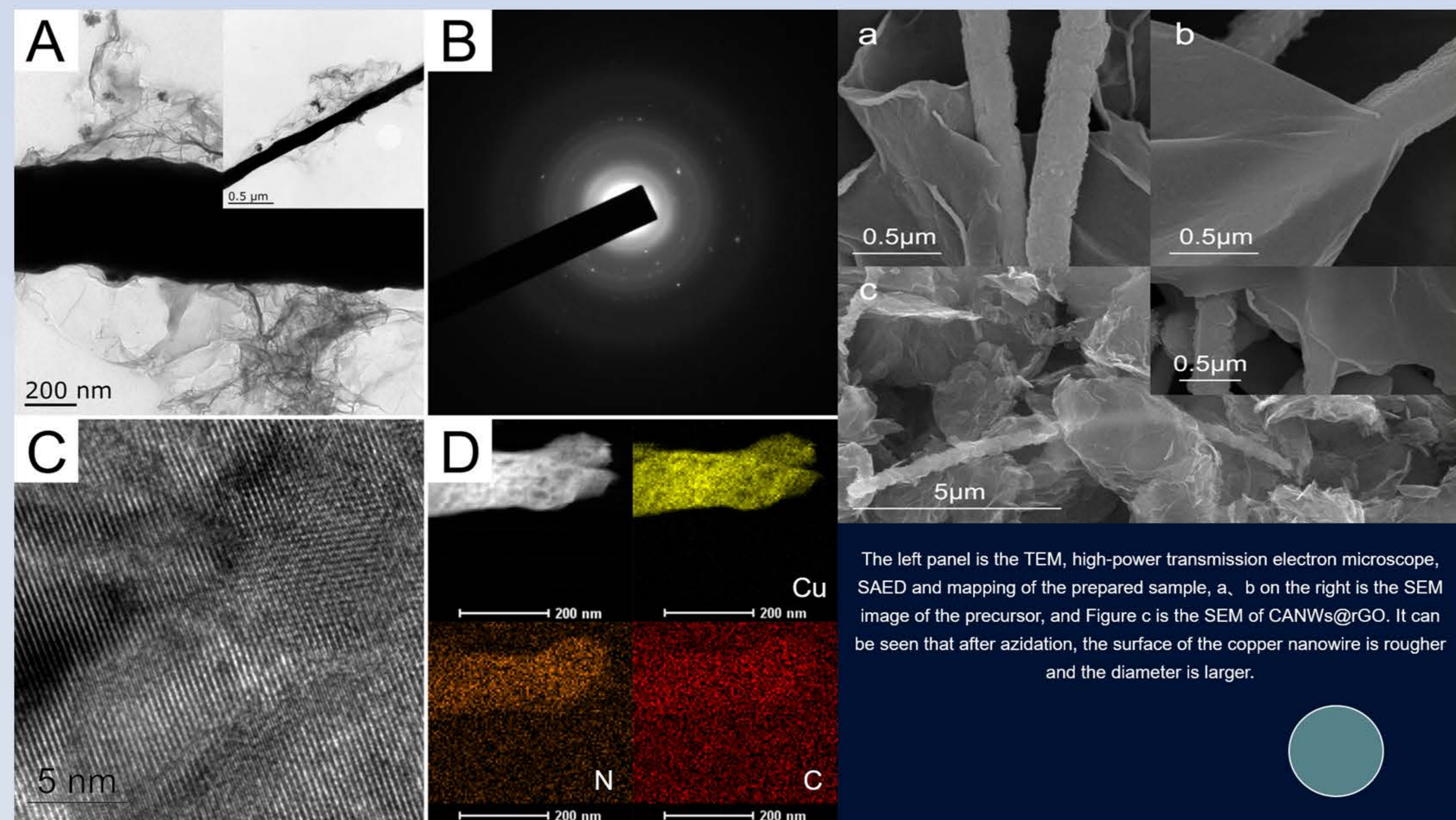
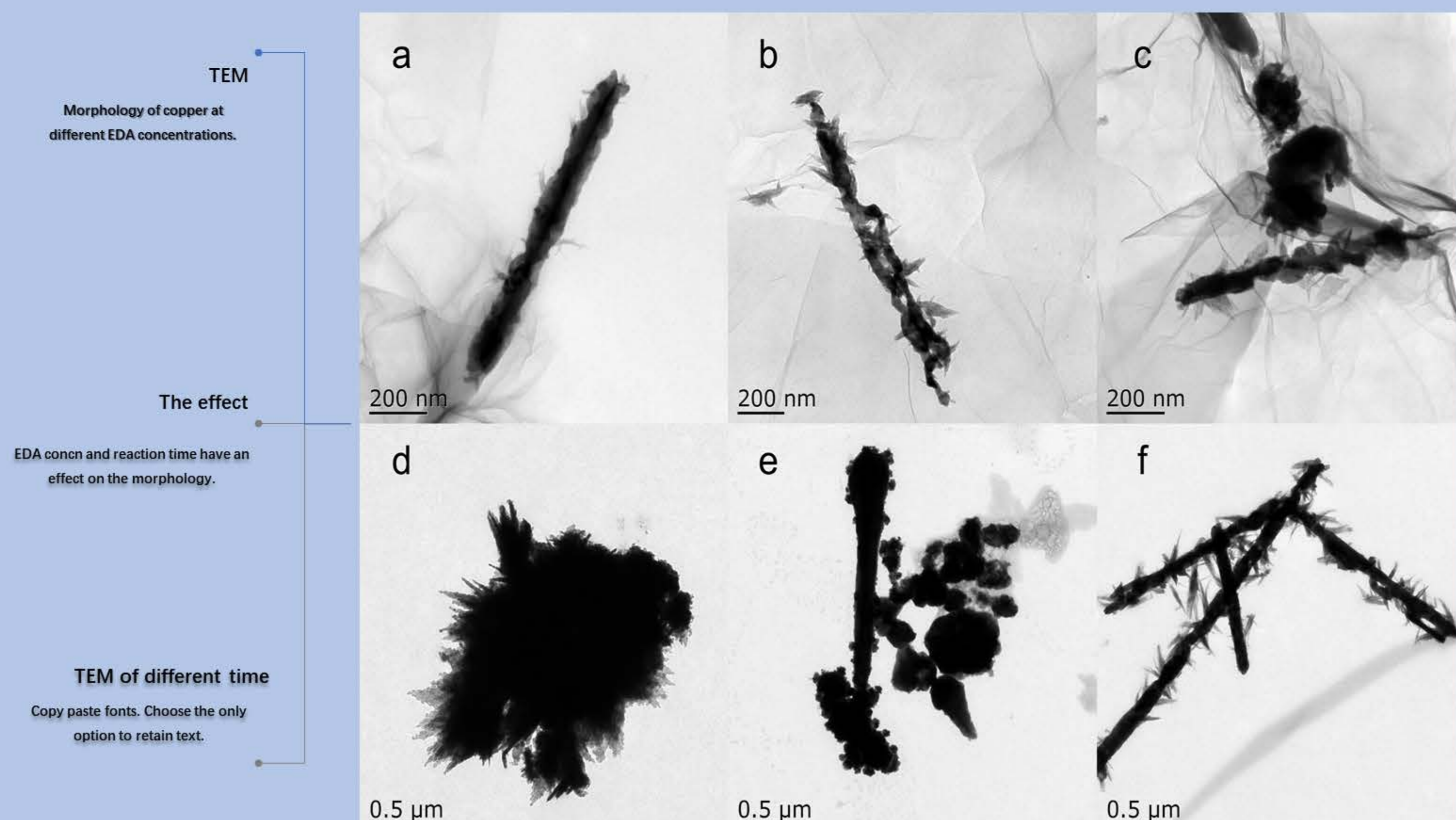
A novel energetic composite with low electrostatic sensitivity was successfully synthesised in this work. Copper nanowires decorated reduced graphene oxide (CuNW@rGO) precursor was prepared through a facile one-pot hydrothermal approach. Then the precursor was deposited on silicon substrate by electrophoretic deposition, which greatly reduced the security risks of directly handling of powder sample. Copper azide nanowires(CANW)@rGO was in-situ fabricated by reaction of copper nanowire (Cu NW) @rGO with HN<sub>3</sub> gas.



## EXPERIMENT

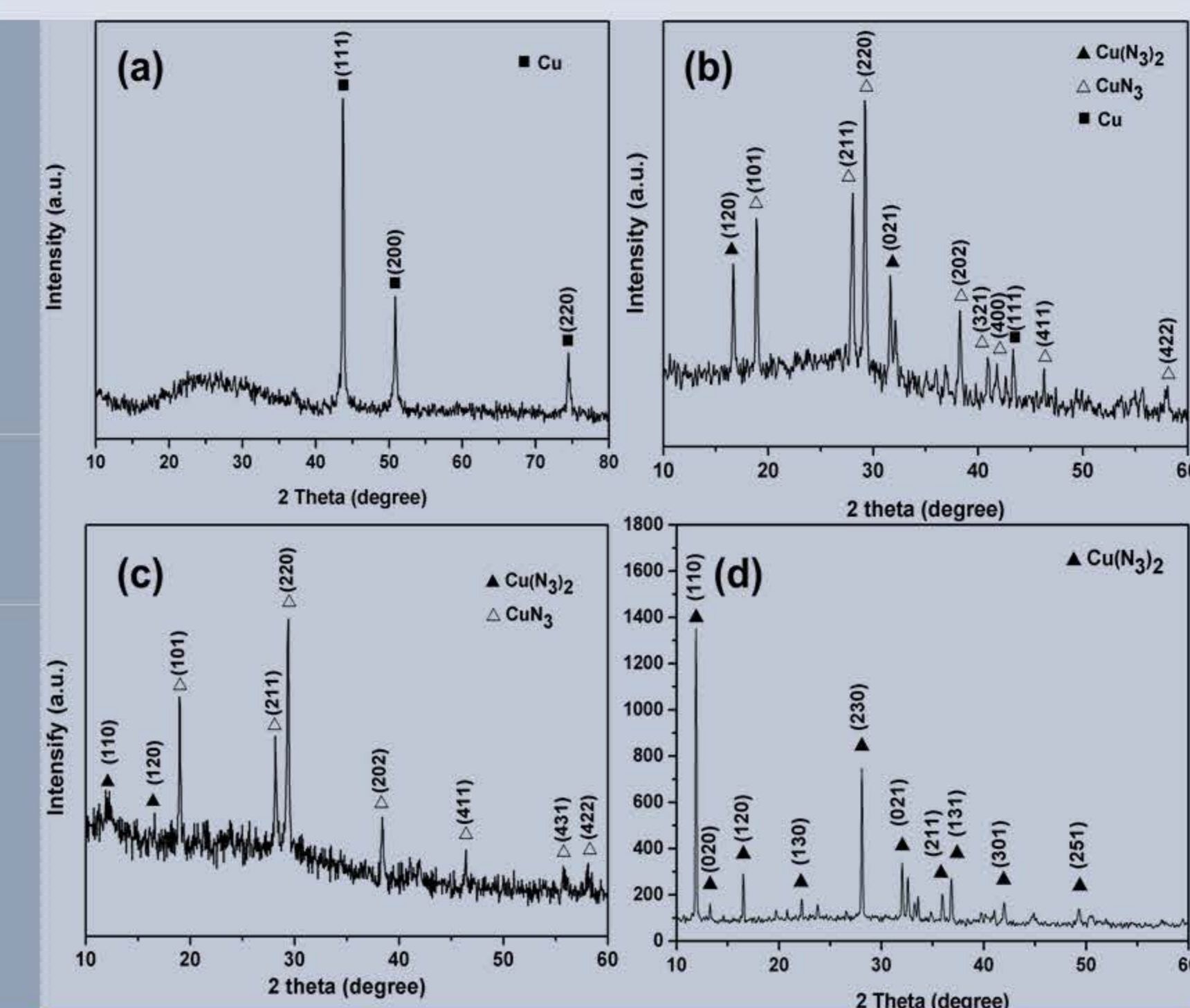
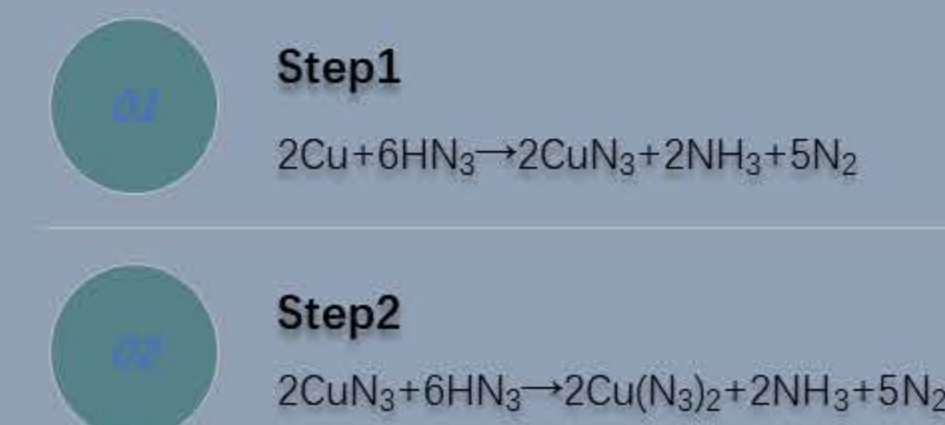


## Synthesis of precursor CuNW@rGO

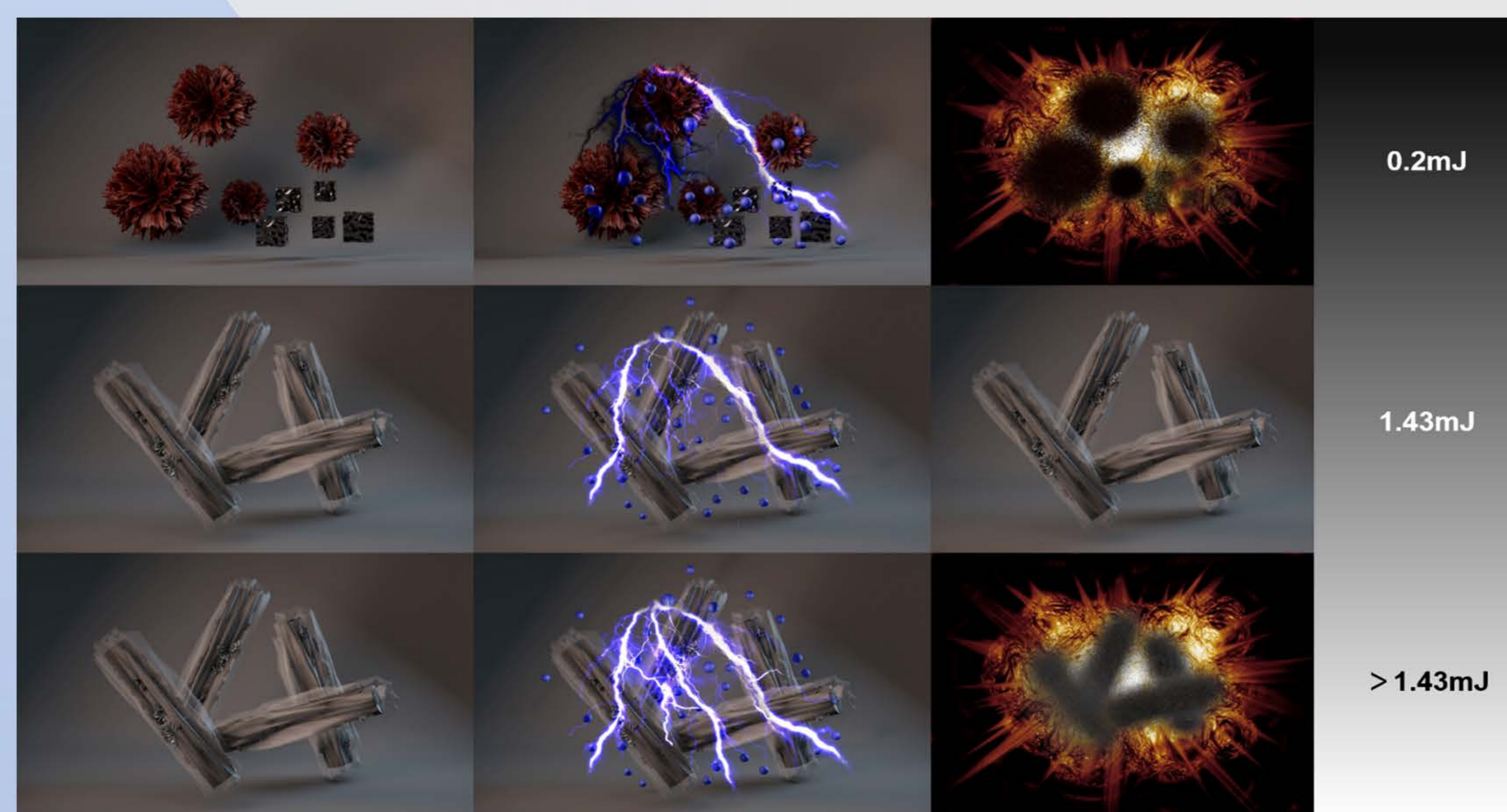


## Azide reaction

The azide reaction is divided into two steps



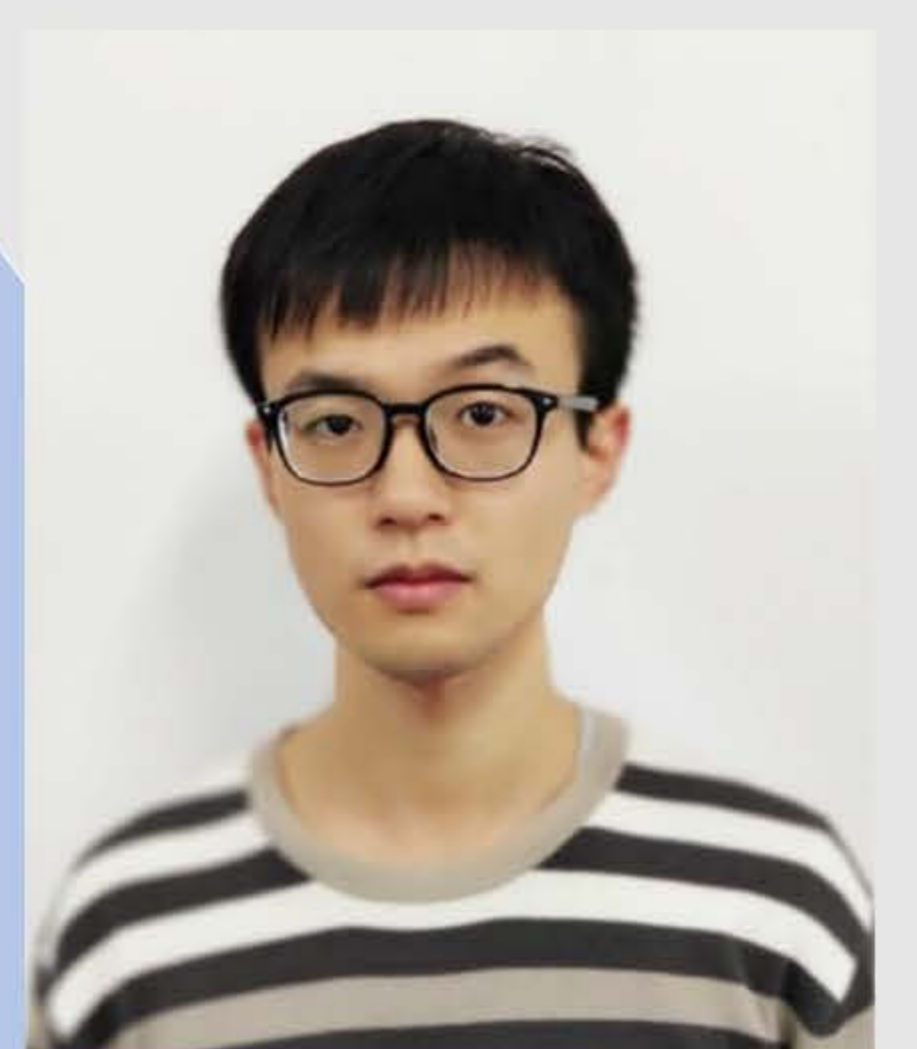
## RESULT&DISCUSSION



The results indicate that the electrostatic sensitivity of the as-prepared CANW@rGO energetic composite was reduced with the addition of rGO.

## REFERENCES&AUTHOR

- [1] Pradyot Patnaik. [M]. Wiley Interscience, 2007.
- [2] Zeng Qingxuan, Jian Guozhen, Li Bing, et al. [J]. Pyrotechnics, 2014 (6): 28-31.
- [3] Chen Bingwen. [D]. Nanjing University of Science and Technology, 2018.
- [4] Wang Q, Feng X, Wang S. [J]. Science Foundation in China. 2017. 285837.
- [5] Li Z, Zhou M, Zhang T. et al. Materials Letters, 2014, 123 (123) : 79-82.
- [6] Guo W, Liu C, Sun X, et al. [J]. Journal of Materials Chemistry, 2011, 22 (3) : 903-908.



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