Lighting up the Raman Signal of Molecules in the Vicinity of Graphene Related Materials

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Abstract Surface enhanced Raman scattering (SERS) is a popular technique to detect the molecules with high selectivity and sensitivity. Nevertheless, how to make the SERS signals repeatable and quantitative, and how to understand the chemical enhancement mechanism are still big challenges. Recently, graphene, as well as the other two dimensional (2D) materials, were developed to be used as a Raman enhancement substrate, which can light up the Raman signals of molecules, and these substrates were demonstrated to be a promising for micro/trace species detection. In this talk, the multi-role of graphene and its related materials played in SERS is overviewed in turn, including a Raman probe, a substrate, an additive and a building block of a flat surface for SERS.

References

[1] J Zhang et. al., Lighting Up the Raman Signal of Molecules in the Vicinity of Graphene Related Materials, Acc. Chem. Res. **48** (7) (2015), 1862-1870.
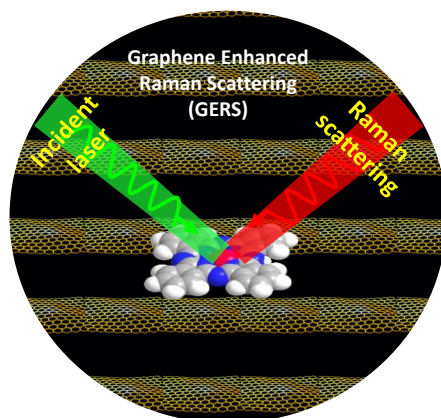
Figure 1 Graphene Enhanced Raman Scattering (GERS)