

Observation of Kondo resonance in graphene decorated with cerium

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Abstract

The interaction between magnetic impurities and metallic background provides a key to understand many-body interaction and its effect on the electro-magnetic properties of a material. Such an interaction leads to the formation of a resonant-type many-body ground state, so-called Kondo resonance, that is enhanced at low temperatures. We investigate temperature-dependent electron band structure of graphene intercalated with cerium, which provides metallic electrons and localized 4f electrons, respectively. Cerium intercalation induces new spectral weight in graphene band structure that becomes stronger at low temperature, which is attributed to the formation and development of a new many-body ground state [1].

References

- [1] J. Hwang et al., Nano Lett. 18 (2018) 3661

Figure

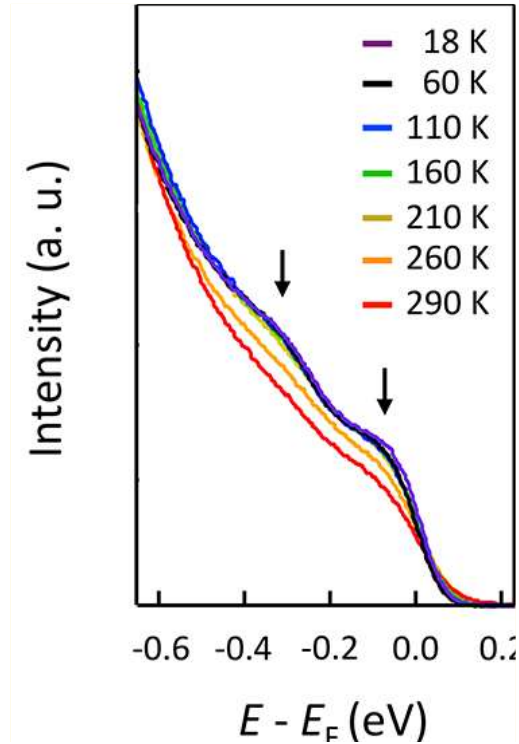


Figure 1: Evolution of spectral intensity of graphene decorated with cerium upon decreasing temperature.