Ultrathin nanocrystals and their interface-based catalytic properties

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When their sizes approach near 1nm, the surface atoms in ultrathin nanostructures will become dominant as compared with those in bulk or traditional nanocrystals with bigger sizes. As a result, the influence of surface effects on the inherent properties of the whole structure will become more remarkable. Ultrathin heteronanostructures will bring two different compounds together at sub-1 nm scale, based on which the interfaces between them will determine the electron transport processes, and even the electron structures and band gaps within the final structures. During the past year, we have made progress in the controlled growth of CdS-$ZnIn_2S_4$ helical nanostructures, Fe_2O_3-Pd hetero-nanocrystals as well as Pt-Cu ultrathin nanosheets-based multi-metal heterostrucutres showing enhanced catalytic properties.

References

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Biography

Xun Wang received his PhD degree from Department of Chemistry, Tsinghua University in 2004. He then joined the faculty of the Department of Chemistry, Tsinghua University in 2004, and was promoted to associate professor and full professor in 2005 and 2007, respectively. Prof. Xun Wang is working on developing new synthetic strategy of inorganic nanocrystals for catalytic and optoelectronic applications. His main awards include Science and Technology Award for Chinese Youth (2009), National Fund for Outstanding Young Scientists (2007) and IUPAC Prize for Young Chemists (2005). He is currently editorial board member of ***Chinese Science Bulletin***, ***Acta Chimica Sinica***, ***Nano Research*** and ***Scientific Reports*** (NPG).