



**CITATION FOR PROFESSOR LIU XIAOGANG**  
**OUTSTANDING RESEARCHER AWARD**

The NUS Outstanding Researcher Award is given annually to a researcher who has made outstanding contributions to his or her field while at NUS.

This year's winner is Professor Liu Xiaogang, who is internationally recognised for his ground-breaking research on luminescent nanomaterials. He has done innovative work on using luminescent nanocrystals to monitor chemical reactions, with applications in sensing and biomedicine.

To give some context on scale when talking about nanomaterials: a fingernail grows one nanometre per second, and one strand of human hair is 50,000 to 100,000 nanometres in diameter.

Xiaogang has eight "homerun" publications. A homerun publication is one that is cited at least twenty times above the average in its field. Xiaogang accounts for eight of the 157 homerun publications achieved by all tenurable faculty at NUS over the past ten years; this is 5% of the total published. I would like to highlight his scientific contributions in two areas.

His most influential breakthrough is the development of nanomaterials that emit visible colours upon illumination with an invisible near-infrared light source. This new class of luminescent nanomaterials can be used as next-generation molecular probes for tracking cancer cells, replacing conventional biomarkers. The new probes are more selective and sensitive, and are less costly to produce.

Xiaogang is globally recognised as a leader in nanoparticle research involving the lanthanide series of elements, which are elements 57 to 71 in the periodic table. His research aims to develop new methods for the controlled synthesis and characterisation of luminescent nanomaterials for use in anti-counterfeiting and in efficient energy conversion in solar cells.

Xiaogang has received numerous accolades for his outstanding scientific contributions. I would like to mention three here. (1) He won the 2016 President's Science Award. (2) In 2015 and 2016, Thomson Reuters named him among the world's most highly cited researchers in chemistry. And (3), he won the 2012 Emerging Investigator Lectureship Award from the Royal Society of Chemistry's flagship journal *Chemical Society Reviews*. This prestigious award is given annually to the most promising materials scientist under the age of 40.

Please join me in honouring Professor Liu Xiaogang with the 2017 Outstanding Researcher Award.