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Smart thermal responsive materials**Y Long**

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Thermo-responsive material responds to solar spectrum differently at the stimulus of heat which makes it attractive in various applications including the energy saving smart windows application. The most studied inorganic thermochromic vanadium dioxide (VO₂) has the intrinsic problems of low luminous transmission (T_{lum}) and low solar modulation (ΔT_{sol} the transmission difference between high and low temperatures). Numerous efforts such as employing dopings, nanoparticle-based composites, and nanoporous structuring have been widely studied. Our group have developed five new approaches to tackle this veritable challenge, namely, biomimetic nanostructuring including photonic structure and moth eye gridded structures tunable plasmonic structures organic and hybrid structures. In addition, an active control has also been applied to thermochromic material to generate

a new electro-thermochromics materials. Some other new emerging thermal responsive materials will be discussed in this talk.

Biography

Y Long studied at Cambridge University, United Kingdom and currently hold senior lecturer position in School of Materials Science in Nanyang Technological University, Singapore. Her research area is to develop different nanostructured functional thin films. She has successfully implemented two technology transfer from lab to industry for Hard Disk Company Seagate Technology. Her more recent work is developing functional smart coatings. She has published widely in high impact journals such as Joule, Advanced Energy Materials, Advanced Functional Materials, ACS Nano, Journal of Materials Chemistry A and Small, etc. and her work has been widely reported in different media and her work has won TechConnect Innovation Award, Washington in 2015.

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