CAMBRIDGE CARES

CAMBRIDGE CENTRE FOR ADVANCED RESEARCH AND EDUCATION IN SINGAPORE LTD.

CARES Visiting Scientists Seminar Series:

Use of Advanced Materials in Johnson Matthey, Catalysis and Functional Film Application

Dr. Peter Bishop, Johnson Matthey Technology Center

Thursday 16th March, 5.00pm - 6.00pm

CREATE Theatrette, Level 2, CREATE Tower

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Abstract: An overview of Johnson Matthey and how divisional structure relates to research at the Johnson Matthey Technology Centre (JMTC) will be given. Heterogeneous catalysis ranging from gas/solution phase and fine chemical synthesis form a strong core within JM products. Underpinning research in materials chemistry relating to inorganic supports and metal nanoparticle synthesis for these transformation will be discussed. Key reactions such as Fischer Tropsch and selective hydrogenation will highlight guiding principles for optimization of product activity and selectivity.

The presentation will move onto other product areas for JM namely glass and electro ceramic applications where materials chemistry underpins the performance of thick film coatings such as obscuration enamels and silver conductors on glass for the automotive industry. The latter part of the presentation will move onto new thin film conducting track technologies for paper and plastic substrates using gold nanoparticles. Relevant TEM/SEM, XRD, ssNMR will be used to support concepts discussed above.

Biography: Peter joined Johnson Matthey in 1988 and currently holds the position of Technology Manager responsible for the catalysis and materials department at the JMTC. His group is engaged in a range of energy storage (batteries), catalytic, nanomaterial and glass/ceramic based research programs where the emphasis is on materials synthesis and related chemical/physical properties. Peter has been instrumental in bringing externally funded initiatives/projects to supplement JM strategy and has built up key contacts throughout Europe via EU and UK funding streams. Activities include positions on UK steering committees such as the NanoKTN, Advanced Materials Leadership Council (AMLC).

Previous to Johnson Matthey Peter worked at the Agricultural Research Centre, Unit of Nitrogen Fixation at Sussex university studying metal-sulfur model complexes for nitrogen activation to ammonia. He obtains his BSc at Sussex and PhD at Essex University.

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