

Lectures on industrial process development

Dr Mark Waugh
Senior Research Scientist at Lucite International

Jueves, 09 de noviembre 2023

12:00h

Sala de grados del Edif. Físicas (Facultad Ciencias)

Viernes, 10 de noviembre 2023

13:00h

Aula 11 del Edif. Físicas (Facultad Ciencias)

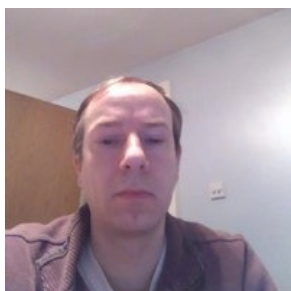
CICLO CONFERENCIAS ISQCH 2023

ABSTRACT

"Alkyne and alkene carbonylation as exemplars of the development of a new process for a commodity chemical"

Methyl methacrylate (MMA) is a monomer used in a variety of polymer, resin and coating applications. It is manufactured on a scale of >3m tons per year. Up to the 1980's it was prepared using the Acetonecyanohydrin (ACH) process. In the 1990's both Shell and ICI tried to develop a novel approach for the preparation of MMA. The first lecture examines the case for why a novel approach was required, what routes to MMA were examined, the approaches that Shell and ICI examined and the approach that was then taken by ICI to move from batch testing to piloting. The second lecture details, with a focus on a homogeneously Palladium catalysed step, the research programme that was undertaken at ICI to commercialise their approach for the preparation of MMA and the results of twenty years of research and development.

CURRICULUM VITAE



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Senior Research Scientist at Lucite International

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BSc and PhD from the University of Newcastle upon Tyne 1993-2000. PhD with Dr Simon Doherty "Di-iron allenyl complex, their synthesis and a systematic examination of their reactivity"

PDRA at the University of Wales, Cardiff campus 2001-2004 with Professor Cameron Jones "Low co-ordinate phosphine studies".

Mitsubishi Chemical 2004-current with a focus on the Alpha process for the preparation of methyl methacrylate.

Listed inventor of eight patents and the co-author of over twenty academic publications.