

James Watt's heat engine: energy transitions past, present, and future

Professor Colin McInnes



7.30 p.m 21st October, 2014
Main Lecture Theatre, (3.25)
John Anderson Building
University of Strathclyde

Biography

Colin Robert McInnes, MBE FRSE FRAeS FInstP FREng, is a Scottish engineer known for his work in solar sails. He is currently one of the leading figures in the field, being the author (or co-author) of over 50 solar sail papers since 2001. He also wrote a book on the subject, *Solar Sailing: Technology, Dynamics and Mission Applications*, which is commonly referenced in solar sail journal papers.

His research interests centre on trajectory and mission analysis for solar sails (about which he has written an authoritative textbook), autonomous spacecraft control and space robotics. He is a fellow of the Royal Aeronautical Society, the Royal Society of Edinburgh and was elected a Fellow of the Royal Academy of Engineering in July 2003.

Colin McInnes is James Watt Chair, Professor of Engineering Science at the University of Glasgow. His broad research interests include spacecraft orbital dynamics, smart structures and climate engineering. He is a Fellow of the Royal Society of Edinburgh and the Royal Academy of Engineering and was made MBE in June 2014 for services to Space Research, Science and Technology.

<http://www.gla.ac.uk/schools/engineering/staff/colinmcinnes/>

Abstract

Some 250 years ago James Watt devised the separate steam condenser while strolling through Glasgow Green one Sunday morning in May 1765. Watt's quite brilliant insight was to greatly improve the efficiency of steam power, marking the end of the wood-burning era and the rise of coal as the fuel of choice. However the era of coal was ultimately to give way to a series of other energy transitions; from coal to oil, methane and nuclear energy.

This lecture will explore what can be learned from these prior energy transitions as we grapple with the issue of growing energy supply to meet rising global demand, while simultaneously attempting to decarbonise the global economy.