



Teaching Sustainability to Engineering Students.

Thursday, Nov 13, 2014, 14:00 – 16:00

CRASSH, 7 West Road, Cambridge, CB3 9DP – Seminar Room 1

Abstract:

A “sustainable development” is one that contributes in an equitable way to human welfare, does so in a way that minimizes the drain on natural resources, complies with the rule of law and is financially viable. Many academic, civil, commercial and legislative projects claim to do this, and many of them are materials-related – examples are: developing biopolymers to replace those derived from oil, imposing carbon taxes, promoting bamboo as a building material and subsidizing domestic PV. We refer to them as “articulations” of sustainable development. But how are they to be assessed? There is no simple, “right” answer to questions of sustainable development – instead, there is a thoughtful, well-researched response that recognizes the concerns of stakeholders, the conflicting priorities and the economic, legal and social constraints of a technology as well as its environmental legacy.

This talk will describe a framework for exploring sustainability from a Materials perspective. The aim is not to define a single metric or index of sustainability; rather it is to improve the quality of discussion and debate on projects that claim to be sustainable developments. This suggests a methodology for the sustainability-analysis of products or projects, supported by a new CES Edu database, SUSTAIN, that provides some of the necessary inputs. The method and database will be illustrated by applying them to a contemporary development – the electric car.

Speaker #1: Professor Mike Ashby, Department of Engineering, founder of Granta Design Ltd (company, specializing in materials information management).

Mike Ashby is now Emeritus Professor in the Engineering Department at Cambridge University, having previously held a Royal Society Research Professor at the University of Cambridge, and a Royal Academy of Engineering Visiting Professor at the Royal College of Art in London. He is the author of some 250 papers and a number of books on materials. Among the more recent are “Cellular Solids” (1997), “Materials Selection in Mechanical Design” (2011), “Materials and Design – the Art and Science of Materials Selection in Product Design” (2014), “Materials and the Environment”, (2013) and “Materials: Engineering, Science, Processing and Design” (2014). His interests are in Design, and in the role Materials play in it. He is a founder and Director of Granta Design, Cambridge, a company specialising in materials informatics and resources for materials education.

Speaker #2: Dr Tatiana Vakhitova, Granta Design Ltd.

Dr Tatiana V Vakhitova, as a part of Education Division, contributes to teaching resources development in the area of Sustainable Development. Tatiana supports educational and research institutions in Central Europe, Eastern Europe, and Middle East. She holds a PhD in Engineering from the Centre for Sustainable Development and an MPhil from the Land Economy Department (University of Cambridge, UK). Tatiana has teaching experience, working as a Teaching Assistant for Engineering Management Division at the University of Cambridge and being a supervisor for students at the Judge Business School, Engineering and Land Economy Departments (University of Cambridge).



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