

Keynote:

The Advanced Manufacturing Challenge: Has anyone somewhere somehow already solved a problem like this before?

Mr. Barry Kennedy, CEO ICMR (Irish Centre for Manufacturing Research) and I2E2 (Innovation for Irelands Energy Efficiency)

As energy cost rises, and the environmental impact of energy production grows, there is an ongoing challenge for manufacturers to drive down their cost base. Some world leading manufacturers are joining forces to try and tackle this challenge. Many have already implemented processes and techniques to help identify and attempt to solve the associated problems. At times the root causes of the issues are understood but the 'solutions' are not so obvious. This paper discusses the size of the challenges facing industry, the opportunity for business growth in the 'Energy Efficiency Market', and asks the question "can TRIZ be an enabler to develop implement-able solutions?"

Keynote:

TRIZ in Samsung, Yesterday, Today and Tomorrow

Ms. Mijeong Song, Ph.D. (Director, CTO Office, SAIT, Samsung Electronics)

Within Samsung TRIZ is known as a good method of thinking that results in good ideas. 1998 could be seen as a starting point of TRIZ within Samsung. In 1998, one of members in SAIT, who had been interested in TRIZ also, wrote a letter to the top management of Samsung Electronics about the value of TRIZ. Since then, the introduction of TRIZ within Samsung and the characterization of its application and impact can be divided over four different eras:

- 1998 to 2001; an increasing interest in the Russian methodology
- 2002 to 2007; very cautious application of TRIZ into the real world and existing frame
- 2008 to 2010; unification and standardization of TRIZ activities within Samsung
- 2011 - ; divergence of TRIZ activity in Samsung Electronics into two directions

There are two top managers who have greatly influenced the development of TRIZ within Samsung Electronics. The one is Mr. Yoon Jong-Yong; the other is Mr. Sohn Wook. They sponsored the spreading of new types of methods like TRIZ, Six Sigma, and so on.

The Future of TRIZ in Samsung seems to be deploying into two main directions. The one is wide spreading of well-tuned training programs to upgrade the creativity of the individual researchers. The other is engaging the philosophy of TRIZ into the main infrastructure of R&D management system with in-house facilitators for proprietary invention/problem solving workshops.

Experience of TRIZ in Samsung Electronics may provide several lessons and insights about TRIZ realization within the environment of other companies.

Keynote:

Creativity “in” the Exact Science

Leonid S. Chechurin, Prof., Dr. of Science, Innovation Theory; Dept. Head (St.Petersburg State Polytechnical University, RUSSIA) and Research Fellow for Dipartimento di Meccanica (Poltecnico di Milano, ITALY)

Any theory requires modelling. TRIZ modelling is based on the concepts of “Engineering System”, “System Operator”, Function modelling, Contradictions, SuFields. It is a qualitative method, but it can help to derive a model of an invention, a concept of new design.

Compared to TRIZ modelling, mathematics is used for far more formal modelling techniques (like statistical models, graphs or differential equations etc.). In addition, mathematics has a tremendous toolbox of standard tools for analysis and synthesis and can generate quantitative answers. But these by no means imply that the usage of the mathematics in design is about complex standard manipulations rather than creativity or that mathematics should be basically used for optimization only.

Inventions in Mathematics and Inventions with Mathematics have always been a blend of high professionalism and creativity. The formal and informal part of creativity in math, TRIZ-assisted thinking in math and math-assisted thinking in TRIZ will be discussed along with a number of examples of outstanding design.

Keynote:

The Importance of Discipline in Innovation

Dr. Eddie Commins, Manager, Applied Innovation Department, Enterprise Ireland

The importance of innovation in economic development is well accepted but the importance of innovation discipline is not as well understood. Many people still think of innovation in terms of predominantly being about R&D or creativity but it is now recognised that being systematic about how they “do” innovation is crucial for enterprises if they are to compete at the highest level internationally.

In the context of innovation being both outcome and process the concept and practice of an “Applied Innovation Model” (AIM) for SME’s is proposed, and the role of TRIZ as a component of this AIM process for SME’s is examined and a proposed location presented.