



Education of Sustainability Engineers

K. Oleschko (1), E. Perrier (2,3), and A.M. Tarquis (4)

(1) Centro de Geociencias, Univ. Autonoma de Mexico (olechko@servidor.unam.mx), (2) Institut de Recherche pour le Développement (IRD), France (perrier@bondy.ird.fr), (3) Institut des Systèmes Complexes Paris Ile-de-France (ISC-PIF), (4) Grupo de Innovacion Educativa RiesgoMat, Universidad Politécnica de Madrid (anamaria.tarquis@upm.es)

It's not the same to educate the sustainable engineers as to prepare the engineers of Sustainability. In the latter case all existing methods of inventive creativity (Altshuller, 1988) should be introduced in the teaching and research processes in order to create a culture of innovation at a group. The Theory of Inventing Problem Solving (TRIZ) is based on the pioneer works of Genrich Altshuller (1988) and his associated. Altshuller reviewed over 2 million patents beginning in 1946 (Orlov, 2006) and developed the Laws of Evolution of Technological Systems; An Algorithm for Inventive Problem Solving (ARIZ); forty typical Techniques for Overcoming System Conflicts (TOSC); a system of 76 Standard Approaches to Inventive Problems (Standards) etc. (Fey and Rivin, 1997). Nowadays, "a theory and constructive instrument package for the controlled synthesis of ideas and the focused transformation of the object to be improved" (Orlov, 2006) are used with high efficacy as the teaching and thinking inventive problem-solving methods in some high schools (Barak and Mesika, 2006; Sokoi et al., 2008) as well as a framework for research (Moehrle, 2005) in construction industry (Zhang et al., 2009); chemical engineering (Cortes Robles et al., 2008) etc. In 2005 US Congress passed the innovation act with the intent of increasing research investment (Gupta, 2007), while China had included inventive principles of TRIZ in strategy and decision making structure design (Kai Yang, 2010). The integrating of TRIZ into eco-innovation diminishes the common conflicts between technology and environment (Chang and Chen, 2004). In our presentation we show discuss some examples of future patents elaborated by the master degree students of Queretaro University, Faculty of Engineering, Mexico using TRIZ methods.

References

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