

Open Innovation Laboratory for Rapid Realization of Sensing, Smart and Sustainable Products (S³ Products) for Higher Education

Authors : J. Miranda, D. Chavarría-Barrientos, M. Ramírez-Cadena, M. E. Macías, P. Ponce, J. Noguez, R. Pérez-Rodríguez, P. K. Wright, A. Molina

Abstract : Higher education methods need to evolve because the new generations of students are learning in different ways. One way is by adopting emergent technologies, new learning methods and promoting the maker movement. As a result, Tecnológico de Monterrey is developing Open Innovation Laboratories as an immediate response to educational challenges of the world. This paper presents an Open Innovation Laboratory for Rapid Realization of Sensing, Smart and Sustainable Products (S³ Products). The Open Innovation Laboratory is composed of a set of specific resources where students and teachers use them to provide solutions to current problems of priority sectors through the development of a new generation of products. This new generation of products considers the concepts Sensing, Smart, and Sustainable. The Open Innovation Laboratory has been implemented in different courses in the context of New Product Development (NPD) and Integrated Manufacturing Systems (IMS) at Tecnológico de Monterrey. The implementation consists of adapting this Open Innovation Laboratory within the course's syllabus in combination with the implementation of specific methodologies for product development, learning methods (Active Learning and Blended Learning using Massive Open Online Courses MOOCs) and rapid product realization platforms. Using the concepts proposed it is possible to demonstrate that students can propose innovative and sustainable products, and demonstrate how the learning process could be improved using technological resources applied in the higher educational sector. Finally, examples of innovative S³ products developed at Tecnológico de Monterrey are presented.

Keywords : active learning, blended learning, maker movement, new product development, open innovation laboratory

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