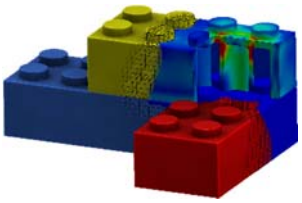

Press Release

ENGINEERING PLAYGROUND

IMAGINATION AND CREATIVITY TO JOIN RESEARCH, UNIVERISITY AND INDUSTRY 4.0

From March 21th to April 25th at Spazio Eventi Tirso in Rome, hosted by the exhibition of LEGO® sculptures "The Art of the Brick"

Rome – From March 21th up to April 25th "**The Art of the Brick**" the exhibition of the sculptures by the NYC artist Nathan Sawaya, built with more than one million of LEGO® bricks, open for the first time in Italy at SET Spazio Eventi Tirso in Rome, hosts the collection "**Engineering Playground**", organized by **Marco Evangelos Biancolini**, Professor of Advanced Machine Design, and **Pier Paolo Valentini**, Professor of Virtual Prototyping, Department of Enterprise Engineering "Mario Lucertini" University of Rome Tor Vergata.

"Engineering Playground" aims to tell a new and visionary approach toward engineering. It is addressed to young and less young people that dreams about how to become an engineer. Because the modern tools of Industry 4.0, as virtual prototyping and 3D printing, are now so close to build parts with LEGO® bricks in order to make Engineering an exciting and challenging game.

The exhibition is arranged as an "Engineering Playground" by the Department of Enterprise Engineering in cooperation with research and industrial partners: HSL, an Italian company with a distinctive expertise in rapid prototyping for small high quality series (with a specific focus in the automotive field), Pipistrel, a Slovenian company that makes light aircrafts and CRG, leader of international go-kart competitions.
Basic principles of engineering will be explained by the 3D printed pieces exposed starting from the simple concept of shrink fit that keeps LEGO® bricks together, up

to more advanced concepts as the flight of a glider and the down-force generated by the Formula 1 wings.

Research and University: the meeting point of ingenuity and creativity

«*Numerical simulation is nowadays a standard that has drastically changed the job of the engineer. We use and develop advanced tools that allows to build virtual prototypes able to foresee with a high level of fidelity the behavior of a system well before its manufacturing. Thanks to 3D printing, we can have a physical prototype straight on our desk.* – explains Prof. Valentini – *This approach, as when we play with LEGO®, leaves an incredible room for the distinctive features of design: imagination and creativity.* ».

«*Our research is usually focused on the most demanding industrial needs and on the technological transfer. Our didactics prepares and trains future engineers for a very competitive International job market* – adds Prof. Biancolini – *and the success of our approach can be recognized on the basis of the success of our Engineers that are often enrolled in key positions worldwide. And sometimes happens that our former students work with us as industrial partners in a virtuous process that sees the knowledge growing by circulating back and forth between industry and university* ».

Innovative Companies and Industry 4.0: a perfect blend between CAE and manufacturing technologies

According to Biancolini «*EU funds access is a strategic enabler for ambitious research projects. Our exhibition is supported by companies that are working with us within the consortia of the EU FP7 projects RBF4AERO e Fortissimo*».

Marco Ponzi of HSL comments that «*the innovative approach for shape optimization developed by the research team of the University of Rome is a key technology for the factories of the future that will drive the creation of new products with an unified method in which the design and the 3D manufacturing are conceived as a whole. This is what we are demonstrating in the Fortissimo project and for the Engineering Playground we have set two installations to show in a clear way how this concept can be a driver for the improvement of automotive components.* ».

According to Matej Andrejašič, researcher at Pipistrel, «*advanced simulation allows to effectively improve the performances of our aircrafts. We have prepared 3D printed models that allow to clearly understand how we are using this concept within the research activities of the RBF4AERO project* ».

Marco Urbinati, track Engineer at CRG, thinks that «*advanced simulation can make the difference during a race. Just a few fraction of second for lap can bring you to the podium and we use every day the tools I have myself developed at Tor Vergata*

during my PhD course. The effectiveness is demonstrated by the results of our team. Who is interested to learn more about karting can attend the exhibition; we have a complete go-kart there with a section engine to better understand how it works. ».

Engineering Playground
21 March- 25 April 2016
SET - Spazio Eventi Tirso a Roma

To learn more:

http://dmmf.mec.uniroma2.it/EngineeringPlayground.html
http://www.theartofthebrick.it