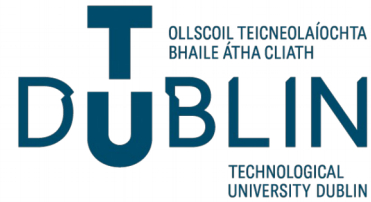


3D Printing

From Products to Prostates: Experiments in 3D Printing Design and Creative Arts



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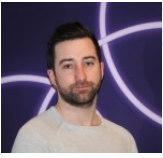
Abstract

This presentation will look at the ways in which 3D printing is being used and taught at Dublin School of Creative Arts, TU Dublin. It presents a diverse range of 3D Printing / Additive Manufacturing projects and applications ranging from printing of Prosthetic Prostates and Tumours, to Drones, to Guitars and Sculptural Artefacts. While the context for the presentation will be in the field of Design and Creative Arts, the focus will be on how 3D printing can be used as a tool to solve a diverse range of problems.

Biography

John Walsh is Assistant Head of School and Lecturer in Product Design at Dublin School of Creative Arts, TU Dublin. He is founder of TU Dublin CreateLAB, which supports industry and entrepreneurs in the development of new products. He is also owner of Made Design Consultancy, a Juror at the iF Design Awards and is a Past-President of the Institute of Designers in Ireland.

The implementation of Additive Manufacturing



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Abstract

3D Printing – still a buzzword or already state of the art? Several forecasts predict a double digit growth rate for the 3D printing market on a global scale. But what does that mean? How can 3D printing support existing business models and even more, how can it create new revenue streams? It all began in the area of labs and prototyping – this session under the context of smart manufacturing will showcase to what extent such technologies have already entered manufacturing, including some showcase examples about how companies are already using 3D printing in their operations.

Biography

Having been introduced to Additive Manufacturing during my Degree in Product Design Engineering, I went to work with multiple companies as a freelance design engineer which led to working with many multi nationals who were beginning their AM journey. Three years ago I begun as a design engineer where I worked with the Principal Investigator to develop out the roadmap, staff and the physical laboratory. Following three successful years of meeting milestones, such as the integration of Metal AM systems and 5 axis Machining centres, along with national and international projects, I became responsible for the technological and strategic direction of the Additive Manufacturing and Machining group, ensuring that the work engaged in is relevant and gives the largest impact to partner companies.

3D electronic packaging for IoT devices – from prototype to series production



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The logo for KONEKT, featuring the word "KONEKT" in white, bold, uppercase letters on an orange rectangular background.

Abstract

Rethinking electronic manufacturing - why do electronic components always have to be soldered onto a printed circuit board? Is it not possible to omit the printed circuit board at all and integrate the components directly into a single chip package instead? This was the question asked by Prof. Bock's team of four researchers at the Electronic packaging lab of the TU Dresden. The result is a manufacturing approach that saves around half of the process and design steps. Thereby, today's and tomorrow's challenges such as high-frequency transmission, cooling and miniaturization can be managed. The technology is called "connecting embedded components as a technological solution" – shortly KONEKT in German. The team around KONEKT raised the EXIST research transfer funding of the BMWi in the amount of 807,000€. This enables the production of adaptively manufactured 3D assemblies on large and competitive dimensions. The KONEKT-technology revolutionizes the electronic assembly by using 3D manufacturing and realizing high-frequency interconnects. It combines the possibility of producing individual packages of rapid prototyping and manufacturing at a large scale. Simplified processes facilitate fast and automated production of various assemblies. Therefore, energy, process and material costs will be reduced. Now, small and medium-sized companies have the opportunity to establish new business fields by ordering individual electronic packages without high set-up costs. During the EXIST-project the KONEKT team will establish a company, which will offer 'packaging-as-a-service'.

Tobias Tiedje (KONEKT project manager): "With KONEKT a wide variety of products can be realized, starting from 3D-sensor systems as prototype up to RFIDs and high-frequency assemblies in series manufacturing for the Internet of Things (IoT). The clients will have much more possibilities in designing their product without limiting their creativity and innovation."

Biography

Tobias Tiedje

DI Tobias Tiedje holds a degree in Electrical Engineering from TU Dresden. He held positions at the Electronics Packaging Laboratory at TU Dresden, including team lead of the junior research group „Communication infrastructure for atto networks in 3D chipstacks (Atto3D)“. Since May 2019 he leads the KONEKT project.

Friedrich Hanzsch

BSc. in Accounting and Finance, MSc. in Resource Economics from Technische Universität Bergakademie Freiberg. He worked at DAS Environmental Experts GmbH as employee in Quality Management and joined KONEKT project in May 2019 as CMO.