

# Press Release

Aachen,  
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## **Artificial tissue – New impetus for the development of implants**

**The generation of artificial tissue for implants has long been the focus of medical research. One of the biggest challenges has been to create multi-layer tissue structures designed to enable the diffusion of nutrients for surrounding cells in a similar manner to natural tissue. This task is now being tackled by a consortium of 16 European partners from industry and the research community under the leadership of the Fraunhofer Institute for Laser Technology ILT.**

On November 23<sup>rd</sup> and 24<sup>th</sup>, 2011, Fraunhofer ILT held the kick-off meeting for the project **ArtiVasc 3D**, which will receive 7.8 million euros of funding from the European Commission under the Seventh Framework Programme. A team of engineers, scientists and medical experts has announced its goal to develop a new process of engineering a vascularized scaffold for artificial tissue, in other words to provide the tissue with a blood supply similar to that of natural arteries. Using current technologies, skin grafts that do not require vascularization cannot be grown beyond a surface area of 1 cm<sup>2</sup> and a thickness of 1-2 mm. For larger and thicker areas of tissue, vascularization is necessary. Over the next four years, the consortium will combine different technologies from the fields of additive manufacturing and biofunctionalization to develop a process capable of engineering blood vessels in an artificial scaffold system. These vascularized scaffolds will be populated with autologous cells in order to enable the formation of vascularized fatty tissue and, ultimately, artificial skin. This artificial skin will be used as an *in vitro* test system – for example to reduce the number of animal experiments – and employed directly in skin grafts.

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**Captions:**

Fig. 1: The ArtiVasc 3D project team at the Fraunhofer Institute for Laser Technology ILT in Aachen.

Source: Fraunhofer Institute for Laser Technology ILT, Aachen.

Fig. 2: ArtiVasc 3D logo.

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