

NIIST (CSIR) Partners with Industry to Create State-of-Art Casting Software

(Agreement to be signed on 26 September 2011)

In a unique partnership of its kind, scientists at the National Institute for Interdisciplinary Science and Technology (NIIST), a CSIR lab based in Thiruvananthapuram, joins hands with 3D Foundry Tech Pvt. Ltd., (3DFT) a company incubated in the Indian Institute of Technology Bombay, to create an advanced software for metal casting industry.

A new module named FLOW+ will incorporate the Solver of Virtual Casting software developed at NIIST. The Solver can perform coupled simulation of metal flow and solidification, enabling visualization of mold filling sequence, changes in casting temperature and solidification rate. This helps in prediction of casting defects such as cold shut and shrinkage porosity without shop-floor trials, saving valuable time, energy and other costs.

FLOW+ will be a new module provided by AutoCAST-X, currently the most popular casting software in India with about 60 licensed users in academia and industry. AutoCAST-X is based on a geometric reasoning engine developed at IIT Bombay, allowing semi-automatic design, 3D modelling and analysis of casting elements like cores, feeders, and gating channels. The software is currently maintained and marketed by 3DFT.

At present, Indian foundry industry loses over Rs. 2000 crore every year in shop-floor trials for new castings and rejections in production castings. This can be saved by computer simulation and optimization of casting designs. Unfortunately, SME foundries that constitute the majority of the 5000-strong foundries in India, are handicapped by a severe shortage of trained technical manpower.

The NIIST-IITB scientists aim to double the penetration of casting simulation software in India within 5 years by keeping the new software affordable and easy-to-use, and supporting it with an online E-Foundry Academy.