



OLIVETTI I-JET

Olivetti i-Jet is part of Olivetti S.p.A., and became part of Telecom Italia Group in August 2003. Olivetti i-Jet is the Group company devoted to R&D and manufacturing in the field of microelectronics applications that range from image and print processing based on ink jet technology, to MEMS, with applications targeting the industrial and biomedical markets.

An important expertise is represented by the process verticality from the Silicon wafer process to the packaging of the chips, together with the integration capabilities into a complex system, including the electromechanical interfaces hosting the analytical Lab-on-Chip.

The Olivetti i-Jet facility in Arnad (Italy) has 6000 square meters of cleanroom space (2000m² is class level <1000), and is the second largest in Italy, so representing one of the largest MEMS foundry in Europe. Manufacturing and R&D share the same cleanroom and equipment, to reduce the transfer-to-manufacturing time, but separate front end and back end pilot lines are available for R&D, as well. Other R&D facilities, mainly devoted to product design are placed in Ivrea (Torino), and in Yverdon (CH). The total number of employees is about 200 people, 80 of whom are involved in R&D, with competences mostly in chemistry (inks and materials formulation), microelectronics, microfluidics and product integration. Since 2001 Olivetti i-Jet is certified ISO-9001 and 14001.

The main microelectronics technologies, spanning from thin layer doping and deposition, to photolithography, together with etching techniques are available. Processes on different kinds of materials (metals, semiconductors, dielectrics and polymers) represent a vast range of combinations which can satisfy, with the list of processes available, a large latitude of requests from the project. Ink jet technology is one of the most flexible methods of fabrication by additive techniques, and has already been successfully employed – besides the traditional home and office printing – in deposition of electronics materials, chemicals, organics and biological molecules.

Expertise in biotech applications of microelectronics, microfluidics and micromechanics (the main assets of Olivetti i-Jet) developed in FP6 project SmartHEALTH, in the running FP7 project D-Liver, and in other national projects have been exploited to create the first Olivetti products in Life Science.

Website: www.olivetti.com



CYANINE TECHNOLOGIES

Cyanine Technologies S.p.A. is a start-up company incorporated in 2006, after winning the second prize at Start-Cup Piemonte regional business plan competition. Cyanine Technologies is settled at the **University of Torino Innovative Companies Incubator**.

The team is composed of chemists, biologists and biotechnologists. Company activities range from basic research on cyanine dyes and electrochemiluminescent organometallic complexes to product synthesis scale up, as well as product development for specific life sciences applications.

The company is also strongly focused on the design and development of nanomaterials for hi-tech applications. Company skills include synthesis of both porous and bulk functionalised silica and titania nanoparticles, functionalised silicon quantum dots, fluorescent autoassembling organic nanoparticles.

Through our collaboration with academic research centres we also developed nanotech tools, such as bio-functionalised porous fluorescent nanoparticles for simultaneous imaging and drug delivery and luminescent nanoparticles deposited on electrodes for bioanalytical applications.

Website: www.cyanine.com

POLITRONICA INKJET PRINTING



Politronica Inkjet Printing S.r.l. started its activity in June 2008, after the presentation of its business idea to Italian Government within the framework "Giovani idee cambiano l'Italia" and winning a loan for the realization of a small production line based on the inkjet printing technology applied to the field of conductive and semiconductive polymeric inks.

Politronica mission encompasses the inks production and the printing of electronic circuits and high-tech devices, making efforts to operate our business in an environmentally responsible manner.

Politronica mainly is focused on the production of nanoparticle-based inks, using aqueous suspensions and avoiding the use of toxic solvents. Its patented production schemes produce no residuals and no wastes, each reactant milligram resulting in a final product.

Research field, that soon will allow Politronica to bring to market new products, is the preparation of magnetic nanoparticles for the production of permanent magnets, a crucial point considering the rising prices of rare earths.

Website: www.politronica.eu