LEADER ITALIA srl, manufacturer of the well-known Implus, S-Type and Nano Implants, after four years of research and studies in vitro and in vivo has started the production of a new range of sintered titanium Implants named “TiXos”.

The innovative direct laser fabrication process, exclusive patent by LEADER ITALIA, is a revolutionary manufacturing technique that enables the production of models with precisely defined structure and proportions based on 3D virtual data. The desired model is produced by sintering metal powder nanoparticles in a focused laser beam. The implants are computer de-

signed and the resulting surface is characterized by intercommunicating cavities that interlock with the host bone.

The cavities geometry, 2 to 100 micron, is accurately selected during the project stage. This geometry allows bone penetration deep inside the implant body, creating pits and pores that are colonized by bone cells.

Another exciting feature, demonstrated by the studies carried out at the University of Birmingham by Prof. R. Sammons, is the isoeelasticity of the surface, that has a Young module equivalent to the bone one, while the implant core maintains the characteristic Young module of titanium. This feature gives the implant a structure very close to the natural tooth, more similar than any other implant on the market.

In vitro studies carried out by Prof. R. Sammons (University of Birmingham – UK) and by Prof. Papaccio (University of Naples – Italy), researches carried out by Universities in Varese and Chieti (Italy) and clinical-histological trials carried out on animals and humans by University of Sao Paulo (Brazil), have demonstrated the capability of these implants to accelerate bone healing, thus improving a faster osseointegration than other surfaces and allowing a great bone formation (up to 200 micron) inside the isoeleastic spongy structure.

The new TiXos implant line is a pioneer in the new age of implant manufacturing, thanks to innovative technologies that allow to obtain particular mechanical and biological features and the possibility to build up custom-made implants for immediate loading and post-extraction, with the precise form of the tooth root, designed starting from patient’s CT scan.