3D MEDICAL PRINTING UNIT

(UPAM3D)

www.upam3d.com

JUSTIFICATION

3D printing is a type of additive manufacturing that allows a digital model to be transformed into a real three-dimensional object.The objects are built layer by layer, using different technologies, such as stereolithography (SLA) or deposition of molten thermoplastic material, the latter being the most popular desktop technology in in-house 3D printing environments.

Limited for a long time to the industrial field, 3D printing has evolved to reach the professional user

In the medical 4.0 the manufacture of biomodels and custom devices through 3D printing allows:

- Personalized medical care: patient-centered precision medicine, improved perceived quality thanks to improved medical communication, and objective quality allowing the optimization of therapeutic times
- Education and clinical training: medical training and procedure simulation
- Pre-clinical testing: improving device design by testing on simulation models
- Innovation in customized medical devices: advanced rapid prototyping reducing verification and validation times.

HGUGM has pioneered the introduction of 3D printing as a working tool in clinical practice and research. In 2014, the first surgery was performed using patient-specific surgical guides manufactured on site for an intervention in Orthopedic Surgery and Traumatology. Since then, the interaction with different specialties has allowed us to gather the knowledge and experience necessary to offer a cost-effective medical 3D printing service.

DESCRIPTION

It is a research support service (SAI) that helps health professionals and researchers who have a need in which 3D printing can contribute to the development of a specific and individualized application in the health area.

The aim of these activities is that innovative projects in these areas have more potential to be transferred to society in general and to the patient in particular

SERVICES OFFERED

- 3D Modeling
- Customized CAD/CAM solutions
- Rapid prototyping: functional analysis, technical evaluation, design and manufacturing
- 3D printing of biomodels from 3D model (STL, OBJ)
- 3D printing of patient-specific devices from medical image segmentation (CT, CBCT, MR, PET)
- Final product development: medical training, surgical simulation, positioning guides, customized instruments and electromedical components.
- Advice on integrating 3D printing technology into the clinical process

RESOURCES

Material Resources

- 3D printing laboratory room (FabLab) with air conditioning, humidity control and filtration system
- ISO13485 certified quality management system
- Multiestation of work composed of computer equipment of last generation with high capacity of file and data processing
- Post-processing tools
- FDM (thermoplastic), SLA (resin), SLS (polyamide), MultiJet and metal printing technology 3D printers
- 3D Surface Scanner
- Polymers and thermoplastic materials
- Bioprinting room
- Coworking space

Human Resources

- Multidisciplinary team of medical specialists, medical imaging experts, biomedical engineers and pharmacists.
- Support team by means of pre and post grade students

LOCATION

Medical 3D printing laboratory is located on the second floor of the pharmacy annex building . C/ Ibiza, 43. 28009. Madrid

CONTACT

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