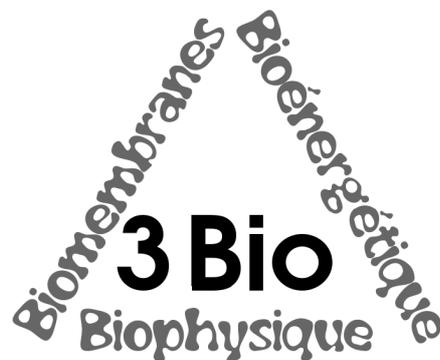


Séminaire du Service de Bioénergétique,
Biologie Structurale et Mécanismes
CEA/Saclay
IBITEC-S



<http://3bio.saclay.org>

lundi 23 avril 2012 à 11h00, Bât. 532 P. 204

Direct fs Laser Writing: Principles and Applications

Maria FARSARI

Institute of Electronic Structure and Laser, Foundation for Research and Technology N. Plastira 100,
Vassilika Vouton, 70013, Heraklion, Crete, GREECE

Direct fs Laser Writing (DLW) based on the multi-photon polymerization of photosensitive materials is a technique that allows the fabrication of three-dimensional structures with sub-micron resolution. The polymerization is based on multi-photon absorption; when the beam of an ultra-fast laser is tightly focused into the volume of a transparent, photosensitive material, the polymerization process can be initiated by non-linear absorption within the focal volume. By moving the laser focus three-dimensionally through the material, 3D structures can be fabricated. The technique has been implemented with a variety of materials and several components and devices have been fabricated such as photonic crystals, biomedical devices, and microscopic models. The unique capability of DLW lies in that it allows the fabrication of computer-designed, fully. In this seminar we summarize the principles of microfabrication by DLW. We discuss the fundamental principles of multi-photon absorption and describe a typical DLW experimental set-up. Then we concentrate on the materials used for DLW microfabrication, and on our recent work in the functionalization of the surface and the bulk of the 3D fabricated structures. Finally, we discuss the future applications and prospects for the technology.

Invitation: Maité PATERNOSTRE

Toute personne extérieure au CEA/Saclay souhaitant assister au séminaire est priée de téléphoner, au moins 24h avant (5 jours avant pour les étrangers à l'UE), au secrétariat (01 6908 2926 ou 01 6908 9068) et de se présenter, munie d'une carte d'identité ou d'un passeport, à l'accueil du CEA/Saclay (accès par la D36).

Foreign scientists who wish to attend the seminar are requested to call the office (01 6908 2926 or 01 6908 9068) at least 24h (EU citizens) or 5 days (non EU citizens) prior to the date of the seminar. Visitors should go to the welcome desk (ACCUEIL), located on the D36 road access to the CEA/Saclay, with an ID card (EU only) or a passport.