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Developments and fabrication of laser targets used to prepare inertial confinement fusion (ICF) experiments on CEA Laser “Mégajoule” (LMJ) facility SOPHIE BEDNARCZYK, FRÉDÉRIC DURUT, BENOÎT RENEAUME, MARC THÉOBALD, ALEXIS CASNER, VÉRONIQUE TASSIN, MARIE-CHRISTINE MONTEIL, DIDIER GALMICH, CEA — A micro materials and technologies research program has started in France since 10 years to develop a very complex cryogenic target to reach the combustion of a deuterium tritium mixture, by indirect drive on the CEA Laser “Mégajoule” (LMJ) facility. This mixture is contained by an amorphous hydrogenated carbon (a-C:H or CH_x) doped with germanium capsule placed in the center of a hohlraum. This research program involves CEA scientists, engineers and technicians united to realize specific targets for carrying out laser plasma experiments on the CEA LIL “Ligne d’Intégration Laser” or OMEGA-UPGRADE facilities. To achieve the production of such specific targets different technologies are successively used (coating, precision machining, laser machining, characterizations, assembling, etc. . .). This article presents an illustration of these microtechnology realizations through particular complex laser targets for hydrodynamic, or parametric instabilities studies and for symmetry experimental effects studies on fusion burn.

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