Abstract Submitted
for the SHOCK15 Meeting of
The American Physical Society

Ab initio and experimental studies of glow-discharge polymer used in Laser MégaJoule capsules PIERRE COLIN-LALU, GAËL HUSER, VANINA RECOULES, GWENAEL SALIN, CEA DAM DIF, CEA DAM DIF TEAM — Equations of state tables used in Initial Confinement Fusion capsule design tools are highly dependent on the cold curve in the multimegabar range. Original ab-initio molecular dynamic simulations were performed to get accurate cold curves of glow-discharge polymer (GDP) plastics. Furthermore the effect of oxygen absorption by GDP structure is studied on the cold curve, as well as its impact on the Hugoniot curves. Results are compared with Hugoniot experimental data obtained in a recent experiment at the LULI2000 laser facility in France. This study leads to improve equation of states knowledge of ablator materials, which is of primary importance for NIF and LMJ experiments.

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Date submitted: 30 Jan 2015 Electronic form version 1.4