

Proton acceleration with a table-top TW laser

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We report on the recent demonstration of proton acceleration from a tailor-made Ti:Sapphire laser system. In the first successful series of autumn 2015, running at 2 TW peak power and 100 Hz diode pump rate, protons up to 0.7 MeV have been spectrally characterised. Subsequently, at increased laser pulse energy and improved contrast, we have obtained maximum particle energies around 1.5 MeV. These results, achieved in single-shot mode with a variety of thin foil targets, are an important step towards our aim of a stable, compact proton accelerator with high rate capacity.

Primary author: Dr SEIMETZ, Michael (I3M)

Co-authors: Dr RUIZ-DE LA CRUZ, Alexandro (PLA); Dr SÁNCHEZ, Filomeno (I3M); Prof. BENLLOCH, José María (I3M); Prof. ROSO, Luis (CLPU); Mr GALÁN, Miguel (PLA); Mr BELLIDO, Pablo (I3M, PLA, CLPU); Mrs MUR LEÓN, Paula (Instituto de Instrumentación para la Imagen Molecular); Mr LERA, Roberto (PLA)

Presenter: Dr SEIMETZ, Michael (I3M)

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