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## Energetic Particles from Laser Produced Plasmas and Applications

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Since the beginning of the high power pulsed laser era, the energy of particles, emerging from plasmas generated in laser matter-interaction, was found sensibly higher than that expected on the basis of the plasma estimated temperature. The evolution in the laser pulse amplification techniques and the progressive shortening of the pulse duration was accompanied by a corresponding increase in power. This led to the production of particles of increasingly greater energy as new acceleration mechanisms could be reached. The characteristics of these sources of energetic particles strongly depend on the laser-pulse and target parameters, opening to different applications, from advanced acceleration technique to medicine, from new X-ray sources to the inertial confinement fusion.

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