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The SPARC_Lab Thomson Source

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The SPARC_LAB Thomson source is a compact X-rays source based on the Thomson backscattering process presently under its second phase of commissioning at LNF. The electron beam energy ranges between 30-150 MeV, the electrons collide head-on with the Ti:Sapphire FLAME laser pulse with energy ranges between 1 and 2.5 J with pulse lengths in the 0.1-10 psec range, this provides a Xrays yield energy tunability in the range of 20-500 keV, with the further capability to generate strongly non-linear phenomena and to drive diffusion processes due to multiple and plural scattering effects. The experimental results on the obtained X-ray radiation and its characterization are presented.

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