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## Smart\*Light: Building a compact ICS source

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Inverse Compton Scattering (ICS) sources are becoming more popular as the future of lab-based x-ray sources. Smart\*Light is one such facility, under commissioning at Eindhoven University of Technology (TU/e). This compact X-ray source aims at bridging the gap between conventional lab X-ray sources and synchrotrons.

Electron bunches are produced by a 100 kV DC photo electron gun in combination with a bunching cavity. The electron bunches are injected in a high gradient X-band accelerator that is driven by a 24 MW 200 ns RF pulse coming from a klystron/pulse compressor combination. After being focused with a solenoid magnet, the electron bunches collide with focused 800 nm laser pulses resulting in X-ray photons with energies between 10 and 40 keV.

This work introduces the design of the low- and high power RF system, gives an overview of measurements of the electron bunch quality, and shows the results of the conditioning of the high gradient accelerator.

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### Footnotes

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