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RADIATION CHEMICAL RESEARCH AROUND A 15 MeV HIGH AVERAGE POWER LINAC

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The Laboratory of Subatomic and Radiation Physics of the University of Gent is equipped with a 15 MeV 20 kW linear electron accelerator (linac) facility. This accelerator was initially designed for fundamental nuclear physics research but was modified to generate beams for new experimental interdisciplinary projects. In its present configuration the accelerator is used as a multipurpose apparatus for research in the fields of polymer chemistry (crosslinking), biomaterials (hydrogels, drug delivery systems, implants), medicine (extracorporeal bone irradiation, human grafts), biomedical materials, food technology (package materials, food preservation), dosimetry (EPR of alanine systems, geldosimetry), solid-state physics, agriculture and nuclear and radiation physics.

In this paper an overview will be presented of both the various research projects around our linac facility involving radiation chemistry and the specialised technologies facilitating this research.