

Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Nuclear Photonics at the Technische Universität Darmstadt¹

MARKUS ROTH, MICHAELA ARNOLD, TOM AUMANN, Technische Universität Darmstadt, VINCENT BAGNOUD, Helmholtzzentrum für Schwerionenforschung - GSI, OLIVER BOINE-FRANKENHEIM, JOACHIM ENDERS, JOHANN ISAAK, THORSTEN KRILL, NORBERT PIETRALLA, GABRIEL SCHAUMANN, Technische Universität Darmstadt — Nuclear Photonics is a rapidly growing field of basic and applied sciences. It links the physics of ultra-intense lasers and high-energy-density matter with nuclear physics and enables new tools and new insight in a variety of topics. At TU Darmstadt, we have embraced this new field and focused on combined research using the strong expertise in nuclear, plasma, laser and accelerator sciences. Ten faculty members have teamed up with their research groups to address this field, focusing on two primary topics: the generation of a bright, laser-driven, neutron source and the use of intense, mono-energetic, polarized gamma beams. Research in this field makes use of the Darmstadt PHELIX laser system at Helmholtzzentrum für Schwerionenforschung - GSI, and the superconducting energy recovery electron accelerator S-DALINAC at TU Darmstadt, but is ultimately aimed at research at the two ELI pillars NP and BEAMLINES, the OMEGA laser system at LLE, the Z-PW Laser at SNL and future upcoming systems. We report on our strategy, the recent activities, on latest results in developing a laser driven neutron source and prospects for research at TU Darmstadt.

¹The Project was funded by the LOEWE initiative of the state of Hesse

Markus Roth
Technische Universität Darmstadt

Date submitted: 01 Jul 2019

Electronic form version 1.4