

## Recent progress on radiation damage studies at RaDIATE

In the recent past, major accelerator facilities have been limited in beam power not by their accelerators but by target and/or window survivability. With present plans to upgrade accelerator facilities at FNAL and J-PARC to higher beam powers (1.2+ MW) in the next decade, timely R&D of robust high power targets and beam windows is needed to fully realize the physics benefits of the higher beam power. An international team of researchers, under the aegis of the Radiation Damage In Accelerator Target Environments (RaDIATE) Collaboration, fabricated test specimens which were irradiated by 181 MeV protons in the Brookhaven Linac Isotope Producer (BLIP) facility at BNL, starting in spring of 2017. Test specimens, including candidate materials for various beam intercepting device applications, were provided by participating facilities. Post-irradiation examination (PIE) is being conducted at participating RaDIATE institutions with appropriate “hot-cell” facilities. The work includes efforts to provide BLIP irradiated samples to in-beam thermal shock test at CERN’s HiRadMat beam-line facility. Thermal shock testing in beam allows observation of how the radiation damaged property data affects material behavior when exposed to actual beam loading conditions. The HiRadMat beam-line experiment proposal was accepted by the HiRadMat Scientific Board and is currently scheduled to run in October, 2018. In this talk up-to-date status of the experiments, PIEs, and prospect for the works conducted by RaDIATE collaboration will be over-viewed.

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