

8th High Power Targetry Workshop (HPTW2023)



8th High Power Targetry Workshop
November 6-10, 2023



Contribution ID: 70

Type: **Contributed Oral**

RaDIATE Collaboration Status and Recent Results on Material Studies

Tuesday, 7 November 2023 09:00 (15 minutes)

A high-power target system is a key beam element to complete future High Energy Physics (HEP) experiments.

In the recent past, major accelerator facilities have been limited in beam power not by their accelerators, but by the beam intercepting device survivability. The target must then endure high power pulsed beam, leading to high cycle thermal stresses/pressures and thermal shocks. The increased beam power will also create significant challenges such as corrosion and radiation damage that can cause harmful effects on the material and degrade their mechanical and thermal properties during irradiation. This can eventually lead to the failure of the material and drastically reduce the lifetime of targets and beam intercepting devices.

In order to operate reliable beam-intercepting devices in the framework of energy and intensity increase projects of the future, the RaDIATE collaboration (Radiation Damage In Accelerator Target Environment) managed by Fermilab, brings together existing expertise from 20 international institutions to execute a coordinated strategy for high power targetry R&D.

After presenting an overview of RaDIATE R&D program in support of High Power Targetry development we will provide recent results on material studies and the prospective towards future irradiation campaign.

Themes for the contribution

2 Radiation damage in target material and related simulations:

Primary author: PELLEMOINE, Frederique (Fermilab)

Presenter: PELLEMOINE, Frederique (Fermilab)

Session Classification: Topic2-2