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## Novel method for real-time temperature monitoring of isotope production targets

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The extraction of radioactive ion beams (RIB) from proton bombardment on Isotope Separation On-Line (ISOL) production targets depends on the optimization of multiple parameters. Proton beam intensity, the position and shape of the proton beam onto the target are important factors. Crucial for the efficient release of radioactive isotopes from a target are peak temperatures up to 2300 C and temperature gradients within.

Since ISOL targets operate in a hard radiation environment conventional temperature diagnostics are not feasible. We have developed an optical system for remote temperature measurements in ISOL targets. It detects the emitted light of the hot target from a distance and correlates near infrared emissions (NIR) to temperature. The device includes a set of optics that transports the light to a NIR spectrometer, and the calculated target temperature is integrated into EPICS and MIDAS frameworks.

The strength of the method is that no prior knowledge of the emissivity is required. The diagnostic guides on-line RIB delivery and supports R&D activities to optimize RIB production.

Details of the device and measurements will be reported.

### Footnotes

### Funding Agency

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### I have read and accept the Conference Policies

Yes

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