



Contribution ID: 342

Type: **Poster Presentation**

Resonant Ionisation Spectroscopy with Time-of-Flight mass detection

Wednesday, 5 July 2017 17:10 (1h 50m)

In this project we will develop a laboratory setup to do Resonant Ionisation Spectroscopy (RIS) of the non-radioactive isotopes of Tin (Sn). Using the RIS method a target element can be ionised and subsequently extracted by electric fields. This method is a critical step in the production of Radioactive Ion Beams (RIBs) used in nuclear physics research, for example at CERN ISOLDE, or for medical applications, for example at CERN MEDICIS.

The focus of this presentation is on ion detection. An experimental setup will be developed for laser ionisation and spectroscopy in a gas and a time-of-flight mass spectrometer (ToF-MS) will be commissioned and tested for ion detection. ToF-MS will be used to identify ionised species. The ToF-MS will also be used to find an effective ionisation scheme for Sn that enhances selectivity and ion production. An atomic vapour of Sn is required and laser ablation using a frequency doubled Nd:YAG laser has been chosen as the desired method to vaporise the element. The Sn vapour will then be introduced into the ToF-MS as a supersonic jet.

Apply to be considered for a student award (Yes / No)?

Yes

Level for award (Hons, MSc, PhD, N/A)?

MSc

Main supervisor (name and email) and his / her institution

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Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

No

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