**Preliminary tests of 26Al fluoride target matrix on AMS system**

Fenclová K.1, Prášek T.1, Němec M.1, Christl M.2, Gautschi P.2, Vockenhuber C.2

*1 Department of Nuclear Chemistry, Czech Technical University in Prague, 115 19 Prague 1, Czech Republic*

*2 Laboratory of Ion Beam Physics, ETH Zürich, 8093 Zürich, Switzerland*

The performance of the fluoride materials using a superhalogenide ion AlF4- extracted from Na3AlF6 based target materials for 26Al/27Al measurements was analysed on the 0.3 MV MILEA AMS. Routine AMS measurements of 26Al/27Al are often performed by using Al2O3 target samples and extracting the negative Al-ions from the ion source. In that case, a 26Mg isobar is suppressed as magnesium does not form sufficiently stable negative ions. However, the intensity of the Al- currents is significantly lower compared to molecular ions like AlO-, which cannot be generally used for analysis due to the formation of the molecular isobar 26MgO-.

A possibility of fluoride matrix utilization for 26Al measurements was investigated initially in a caesium sputtering ion source of the Tandetron system and subsequently on the MILEA AMS system at ETH Zürich. The AlF4- current was used to evaluate the performance of the respective samples. Additives as PbF2 were tested to increase the extracted ion currents and samples containing MgF2 were used to investigate the presence of isobaric ions and the ionization efficiency of AlF4- was determined by recording the 27Al2+ current on the high energy side. The signals of 26Al2+ were investigated with the gas ionization detector and a possible interference from magnesium and cathode material was identified.

In the RADIATE project at VERA, a possibility of using aluminium fluorides for 26Al/27Al AMS measurement by extracting AlF4- will be studied in combination with the laser techniques (ILIAMS) to separate the aluminium signal from magnesium interference belonging to 26Mg2+.