

# Characterisation of natural and oxygen targets in lithium carbonate foils

P. Papka<sup>1</sup>, N.Y Kheswa<sup>2</sup>, M. Msimanga<sup>2</sup>, C. Pineda-Vargas<sup>2</sup>, N.S Soić<sup>3</sup>

1. Department of Physics, university of Stellenbosch, Private Bag X1, 7602 Matieland

2. iThemba LABS, PO Box 722, Somerset West, 7129, South Africa

3. Rud-er Bošković Institute, P.O. Box 1016, HR-10001 Zagreb, Croatia

## Abstract

A method for making oxygen targets in a form of lithium carbonate ( $\text{Li}_2\text{CO}_3$ ) compound is described. Targets were for nuclear physics experiment which required oxygen with a mass greater than 60%. Both natural and isotopic enriched targets of  $^{17,18}\text{O}$  with thicknesses of less than  $1 \text{ mg}\cdot\text{cm}^{-2}$  were produced and characterized by ERDA and RBS techniques. Results obtained showed that enriched foils had limited isotopic exchange when exposed to air and good stability with time compared to foils with natural oxygen.

**Keywords:** oxygen targets, lithium carbonate, ERDA, RBS, characterization