

X-ray Raman scattering study of Li-based compounds at high temperature

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Lithium (Li) is an important industrial metal. It is principally used in Lithium batteries but is also a very important element for various other applications such as glass and glass-ceramics (*e.g.* Zerodur® Schott AG).

X-ray Raman scattering data have been collected, at high temperature, for several Li-bearing compounds (lithium minerals, salts and glasses) at the GALAXIE beamline (SOLEIL, F) by using a heating wire system [1] (Figure 1).

We will present the results obtained at high temperatures, and we will compare Li K-edge data obtained at room temperature [2]. In particular, we will focus on the specific spectral features observed in crystalline and amorphous compounds, which are related to the Li ions local bonding environment.

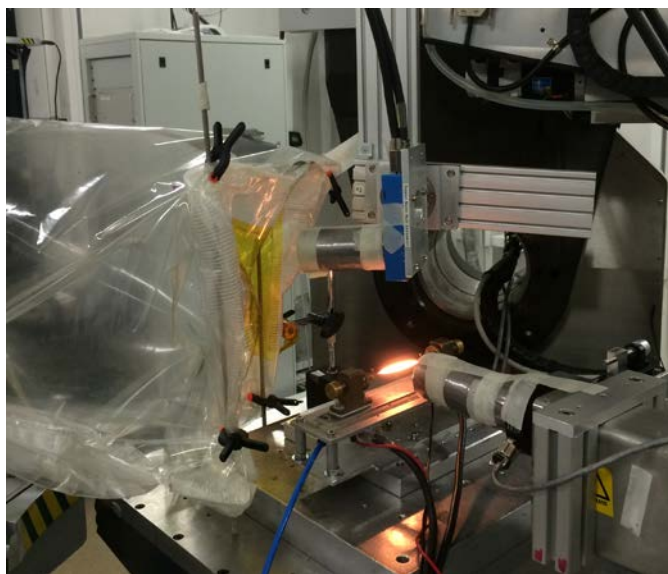


Figure 1: heating wire system on GALAXIE beamline (SOLEIL synchrotron, F)

References

- [1] - D.R. Neuville, L. Hennet, P. Florian, D. de Ligny, In "Spectroscopic methods in Mineralogy and Material Sciences" (Eds. G.S Henderson, D.R. Neuville, B. Down) Review in Mineralogy and Geochemistry **78**, 779-800 (2014).
- [2] - C. O'Shaughnessy, G. Henderson, B. Moulton, L. Zuin and D.R. Neuville, Journal of Synchrotron Radiation **25**, 543-551 (2018).