

## Cori monazite, Itambé-Brazil, a new reference material for U-Pb geochronology by LA-ICP-MS

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Due to the presence of large amounts of U, associated with low common Pb, monazite is considered useful as a geochronometer [1]. Additionally, the LREE present in its structure may be valuable for crustal evolution studies [2]. With this in mind, the IGL (University of Campinas) established the routine for monazite U-Pb geochronology using samples from pegmatites of Itambé region. IGL is equipped with a Photon Machines Excite.193 with a two volume sample cell HelEx laser ablation system coupled with a Thermo Scientific Element SF-ICP-MS. The laser was set up at 10 Hz frequency, spot size of 15 µm and fluence of 4.74 J cm<sup>-2</sup>. The ablation time was 60 s (20 s for gas blank and 40 s for sample ablation). 44069 monazite [3] was used for external calibration and data were reduced off-line using the package Iolite 2.5/VizualAge. Bananeira [4] and Cori monazites were analysed as unknowns, both from Itambé region.

The results, table below, defined the concordant average ages (<sup>206</sup>Pb/<sup>238</sup>U and <sup>207</sup>Pb/<sup>235</sup>U) which within errors, matches the ages established in the literature for 44069 [3] and Bananeira [4]; Cori monazite yielded an older age of 521 ± 1 Ma. Given its homogeneity and large amount of sample available in IGL we suggest Cori as a new monazite reference material for quality control in LA-ICP-MS geochronology.

To complement Cori Monazite characterization, trace elements studies are being designed.

Monazite	Concordia Age (Ma)	Average <sup>206</sup> Pb/ <sup>238</sup> U	Average <sup>207</sup> Pb/ <sup>235</sup> U	Age [Ref.]
44069	424±1 (n=53)	424±1	424±1	424.9±0.4 [3]
Bananeira	508±1 (n=58)	508±1	507±1	507±15 [4]
Cori	521 ± 1 (n=98)	519±2	520±2	this study

[1] Parrish (1990) *Can. J. Earth Sci.* 27, 1431-1450; [2] Farlane and McCulloch (2007) *Chem. Geol.* 245, 45-60; [3] Alekhnoff et al. (2006) *Geol. Soc. Am. Bull.* 118, 39-64; [4] Gonçalves *et al* (2016) *Chem. Geol.* 424, 30- 50