**Supplemental File S2: Analytical protocol of monazite analysis:**

The crystal configurations, analytical conditions, and the standards for analysis are identical to the protocol-I of Prabhakar (2013). A short summary is provided here. Synthetic standards were used to analyze REEs (LaLα, CeLα, Prβ, NdLβ, SmLα, GdLβ, DyLα, HoLβ), YLα, ThMα, UMβ, PbMα, and SiKα; natural mineral standards were used to calibrate AlKα, FeKα, PKα and CaKα. The peak-times for measurements were 10 s (Al, Si, Ca and Fe), 20 s (P) and 30 s (Y and REEs; La and Ce were analyzed for 40 s). Longer measurements were applied to PbMα (300 s), ThMα (200 s) and UMβ (200 s) spectral analyses. Background measurements were made in half the peak-time.