

**Figure S1.** X-ray diﬀraction patterns of composite A-mixed and sample #123, in the range of 20–43° showing in magnification the identified heavy minerals. Quartz appears as the stronger peak. The major peaks of intensities for the heavy minerals only are marked. Monazite(-Ce) peaks shown are indicative (database for RRUFF™ Project [43]). Ttn = titanite, Mz = monazite, Mg-Hbl = magnesiohornblende, Prg = pargasite, Aln = allanite, Mt = magnetite, Hem = hematite).