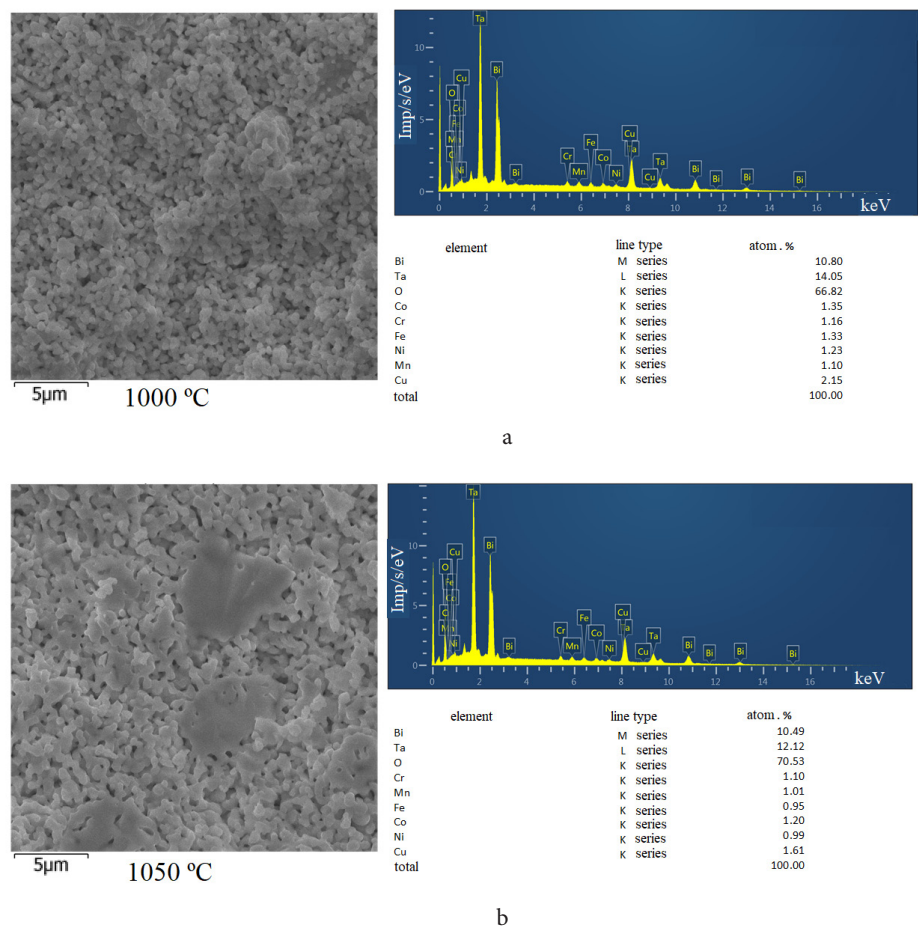
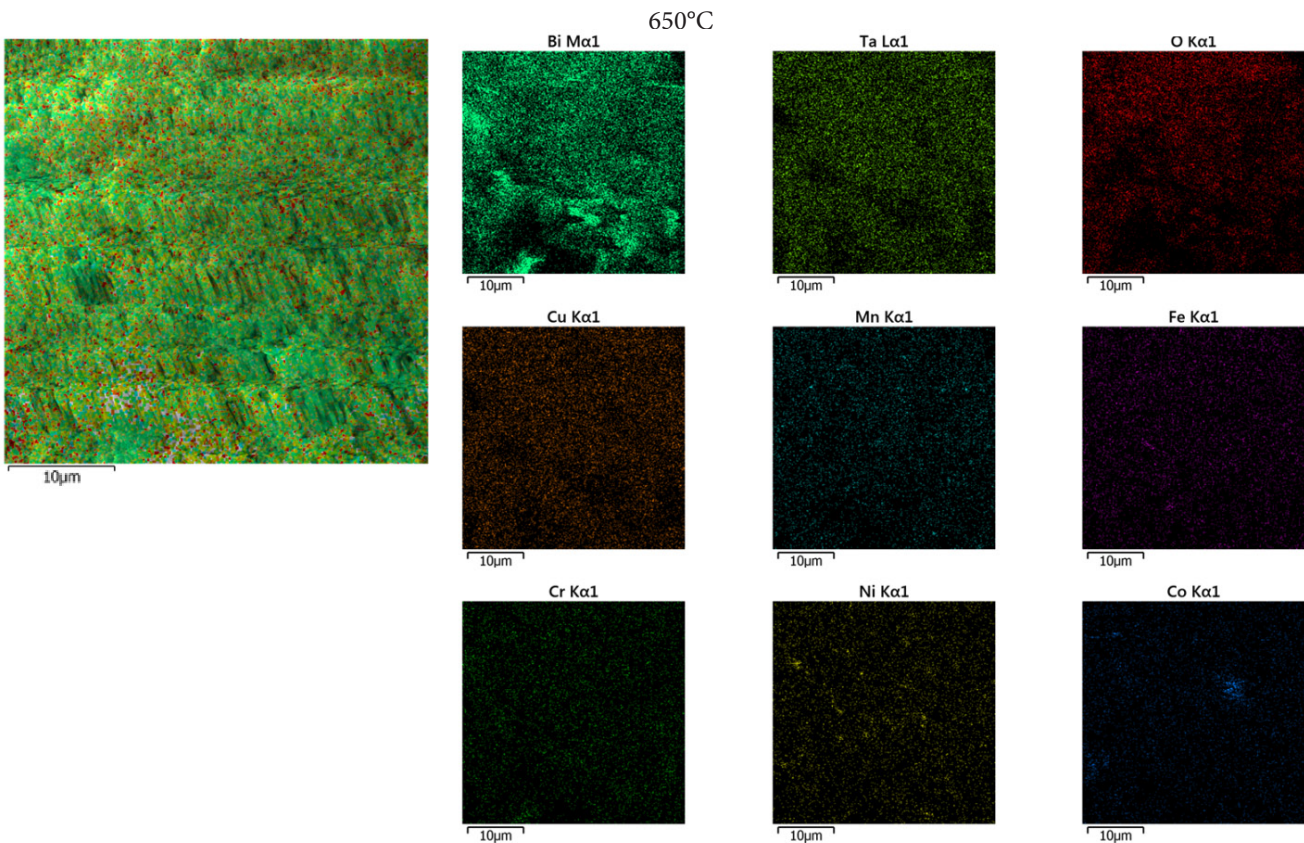


Supplementary material

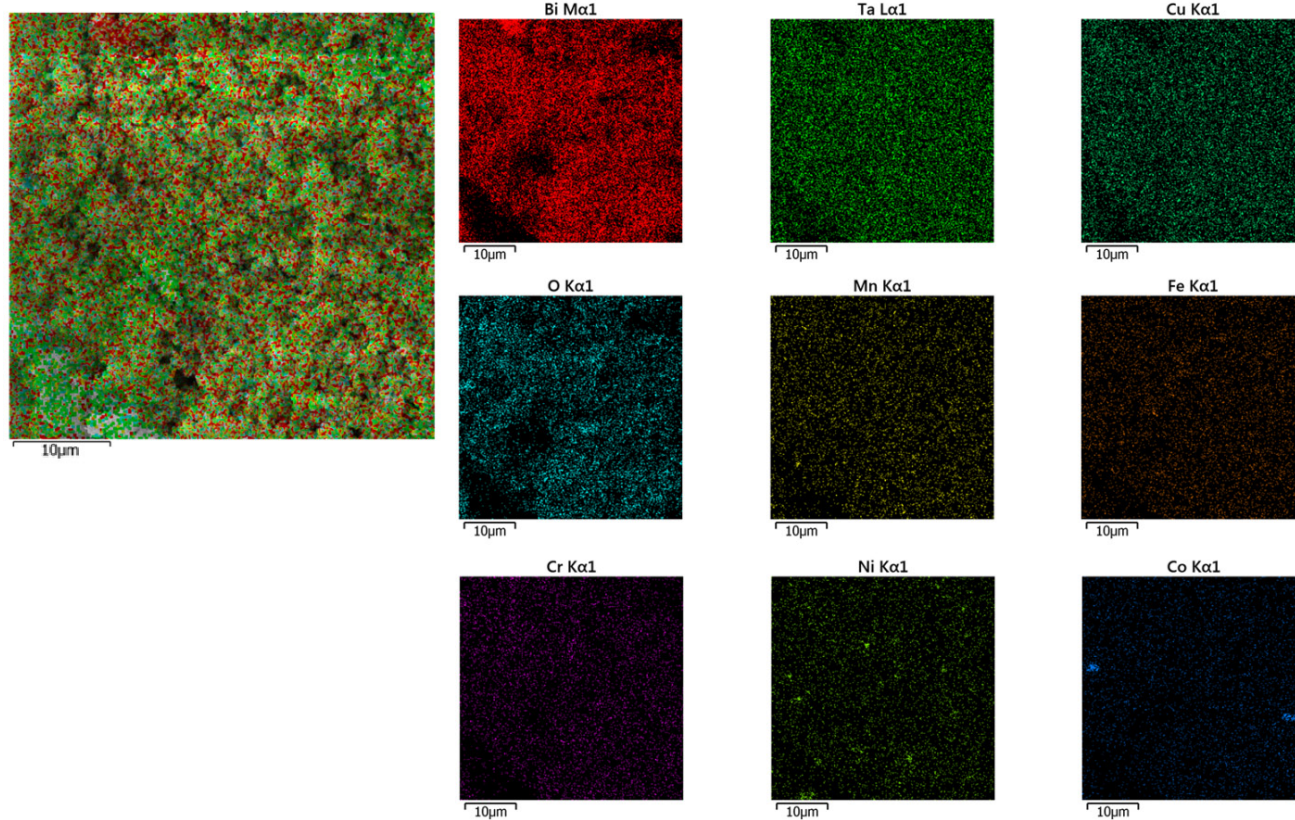


**Fig. S1.** (Color online) Micrographs and EDS analysis of the  $\text{Bi}_{2-1/3}\text{Cr}_{1/6}\text{Mn}_{1/6}\text{Fe}_{1/6}\text{Co}_{1/6}\text{Ni}_{1/6}\text{Cu}_{1/6}\text{Ta}_2\text{O}_{9+\Delta}$  sample, calcined at 1000°C (a) and 1050°C (b).

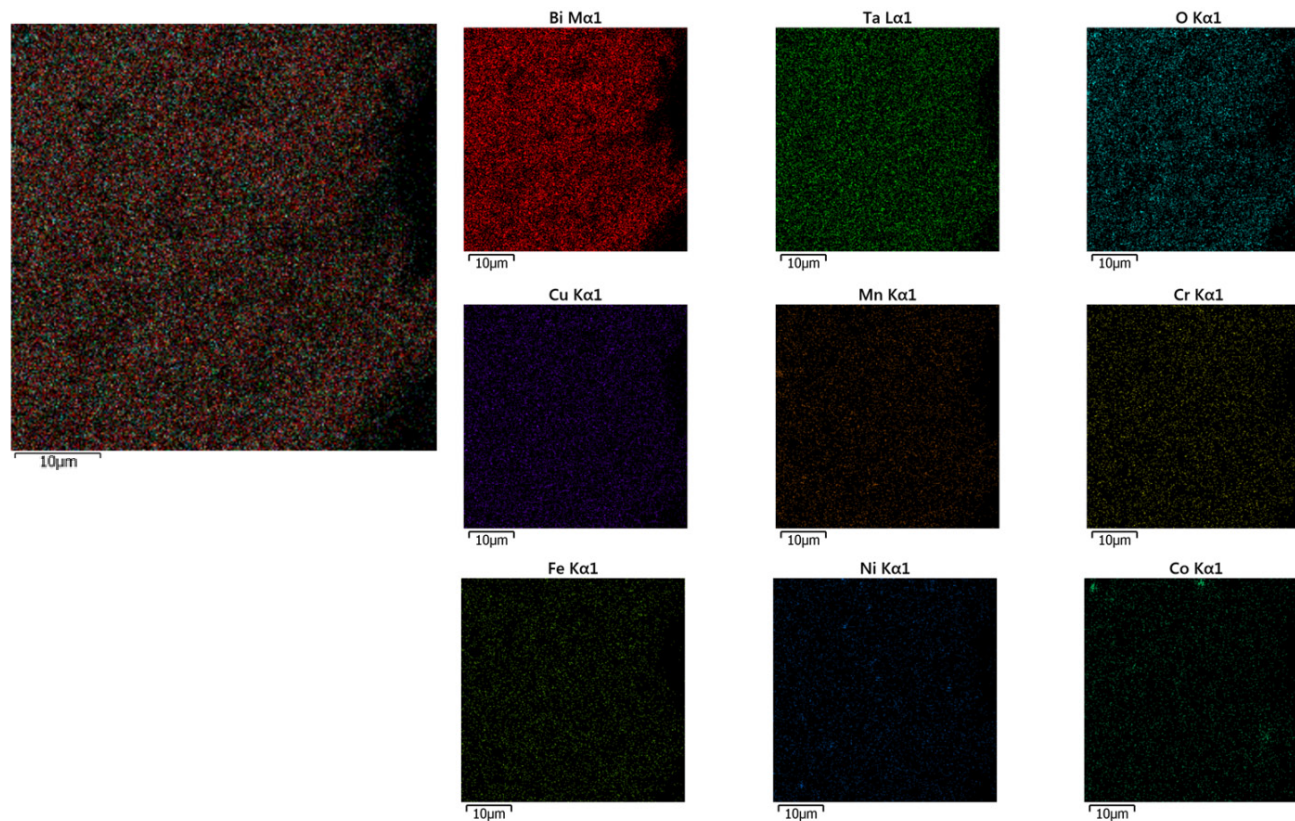




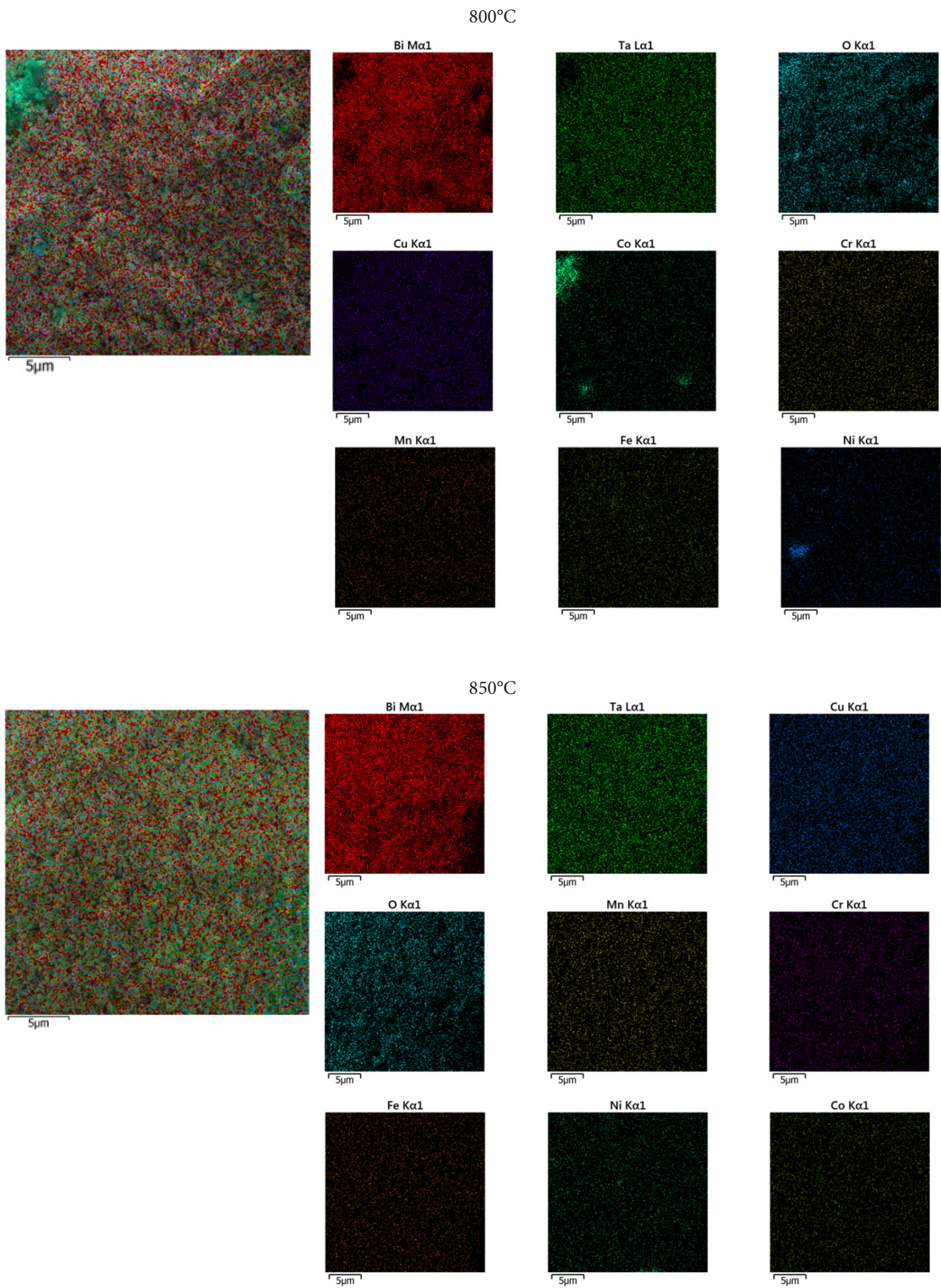
700°C



750°C

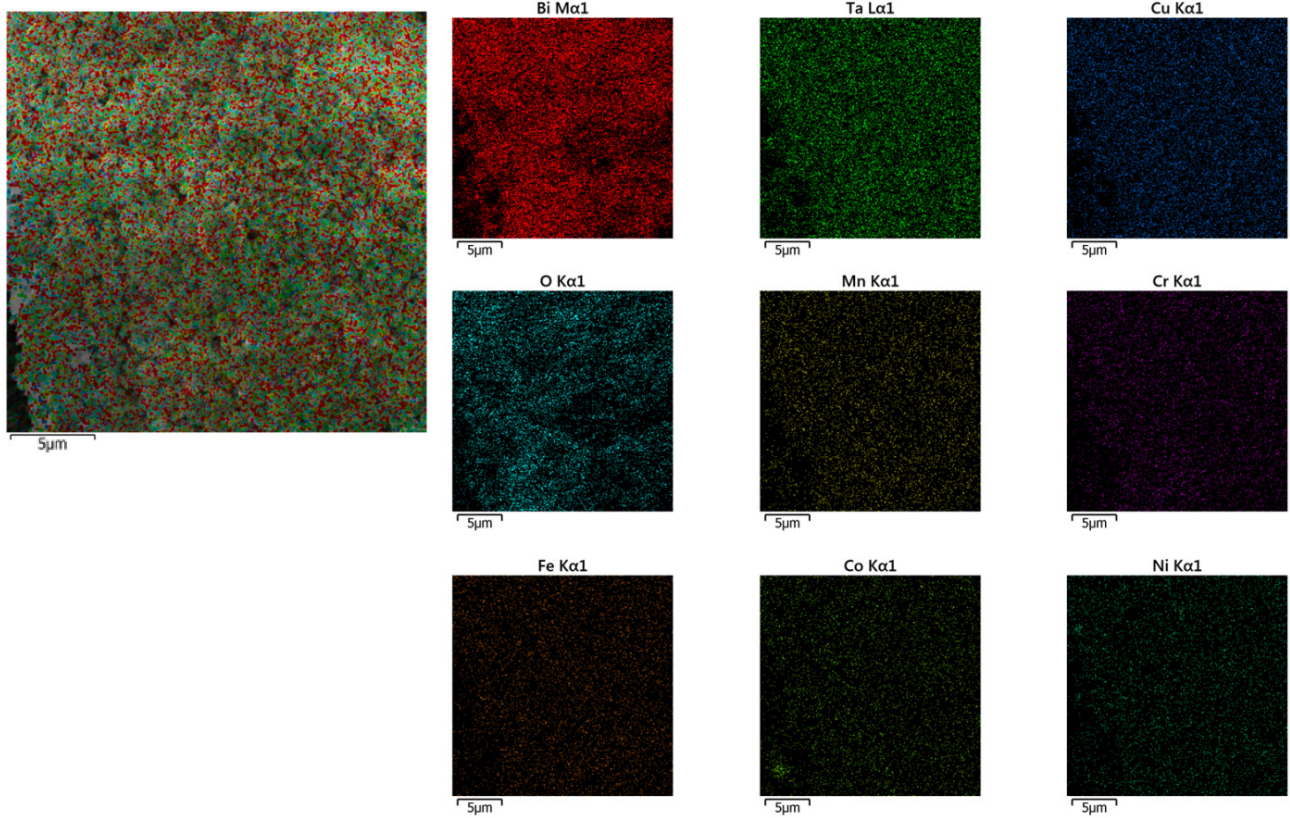




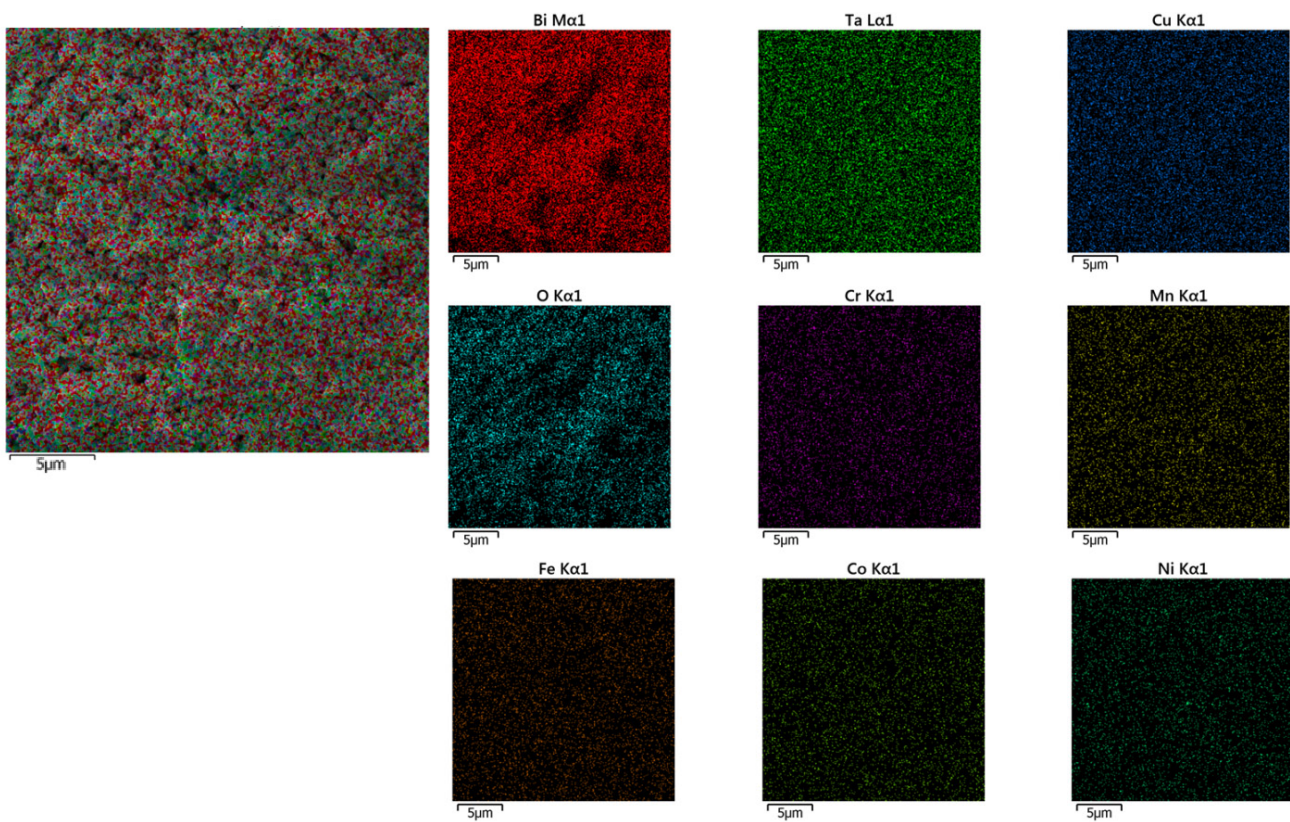




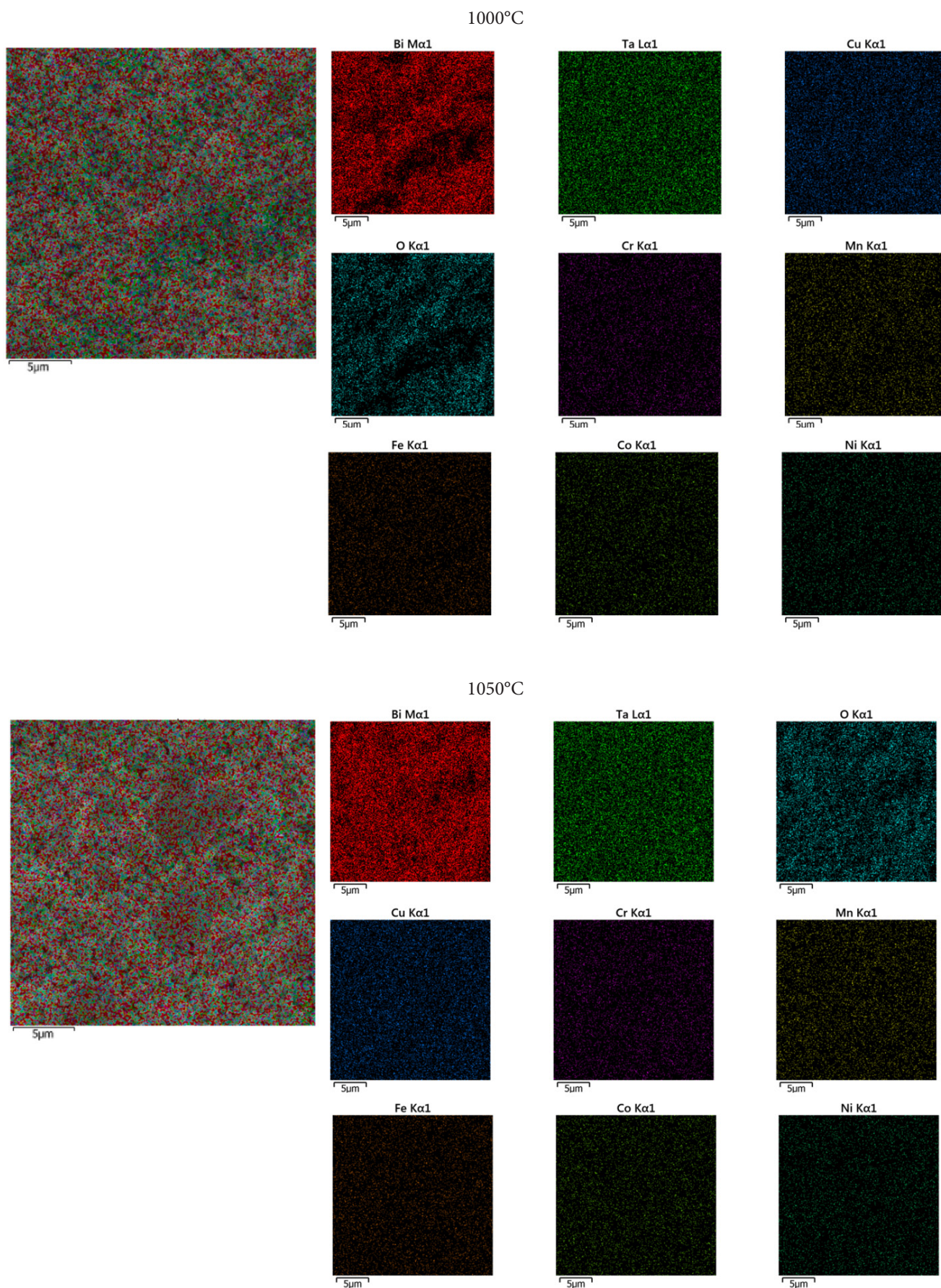
900°C



950°C



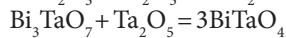
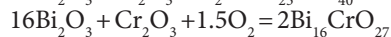
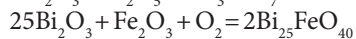
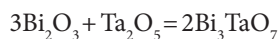




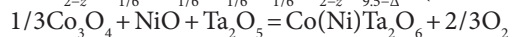
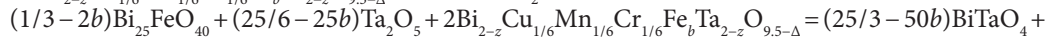
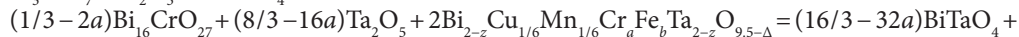
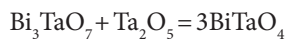
**Fig. S2.** (Color online) EDS elemental mapping of the  $\text{Bi}_{2-1/3}\text{Cr}_{1/6}\text{Mn}_{1/6}\text{Fe}_{1/6}\text{Co}_{1/6}\text{Ni}_{1/6}\text{Cu}_{1/6}\text{Ta}_2\text{O}_{9+\Delta}$  samples, synthesized at temperatures from 650 to 1050°C.

**Scheme S1.** Probable sequence of chemical reactions in the synthesis of the pyrochlore.

$\leq 650^\circ\text{C}$



$650 - 750^\circ\text{C}$



$750 - 1050^\circ\text{C}$

