Erratum: Evolution of precipitate morphology during heat treatment and its implications for the superconductivity in $K_xFe_{1.6+y}Se_2$ single crystals [Phys. Rev. B 86, 144507 (2012)]

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The authors realized that the crystallographic directions in the back-reflection Laue x-ray pattern shown in the inset of Fig. 4(a) in the original paper were incorrectly assigned to the crystallographic directions of the iron vacancy ordered phase with a superstructure. The primitive crystallographic axes indicated in Fig. 4(b) actually correspond to ***a*** and ***b*** axes of a parent $ThCr_2Si_2$-type structure, so-called 122 structure. And the stripes orient along [110] and [1$\bar{1}$0] directions of the 122 structure, but not the superstructure. The schematic drawing which describes the stripe pattern shown in Fig. 4(c) has been redrawn accordingly.

The above corrections neither affect the major findings nor change any conclusions in our paper. The error only affects the orientation of stripes and stripe structure of $K_xFe_{1.6+y}Se_2$ single crystals.

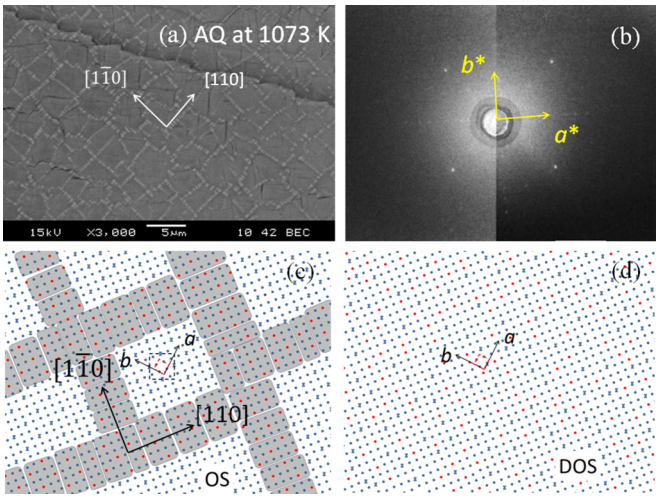

FIG. 4. (Color online) SEM images reveal the coexistence of two phases in $K_xFe_{1.6+y}Se_2$ single crystals. (a) The crystals obtained by as-quenching (AQ) at 1073 K showing bright network. (b) Back-reflection Laue x-ray pattern of the same crystal, where yellow arrows indicate the orientation of ***a*** and ***b*** axes of 122 structure. (c) Schematic drawing of phase separation. The square in red dashed lines marks the unit cell of 122 structure, while that in black dashed lines corresponds to the unit cell of superstructure. Network is supposed to be 122 structure, where iron vacancy sites (Fe2 sites) are filled with red spots. The iron vacancy sites in the superstructure, that is iron vacancy ordering status (OS), are represented by the cross (Fe2 sites). Fe1 sites (blue spots) are fully occupied. The length of the long side of rectangular bar ranges from several hundred nanometers in as-quenched and postannealed samples to $\sim 1\ \mu$m in furnace-cooled samples. In order to display the crystal structures of the superconducting phase and iron vacancy ordered phase, rectangular bars were drawn at a scale of $\sim 1 : 100$. Lattice distortions in the interface between two phases are omitted. (d) Iron vacancy disordering status (DOS).