

Figure 1. Scheme of ESD experimental setup

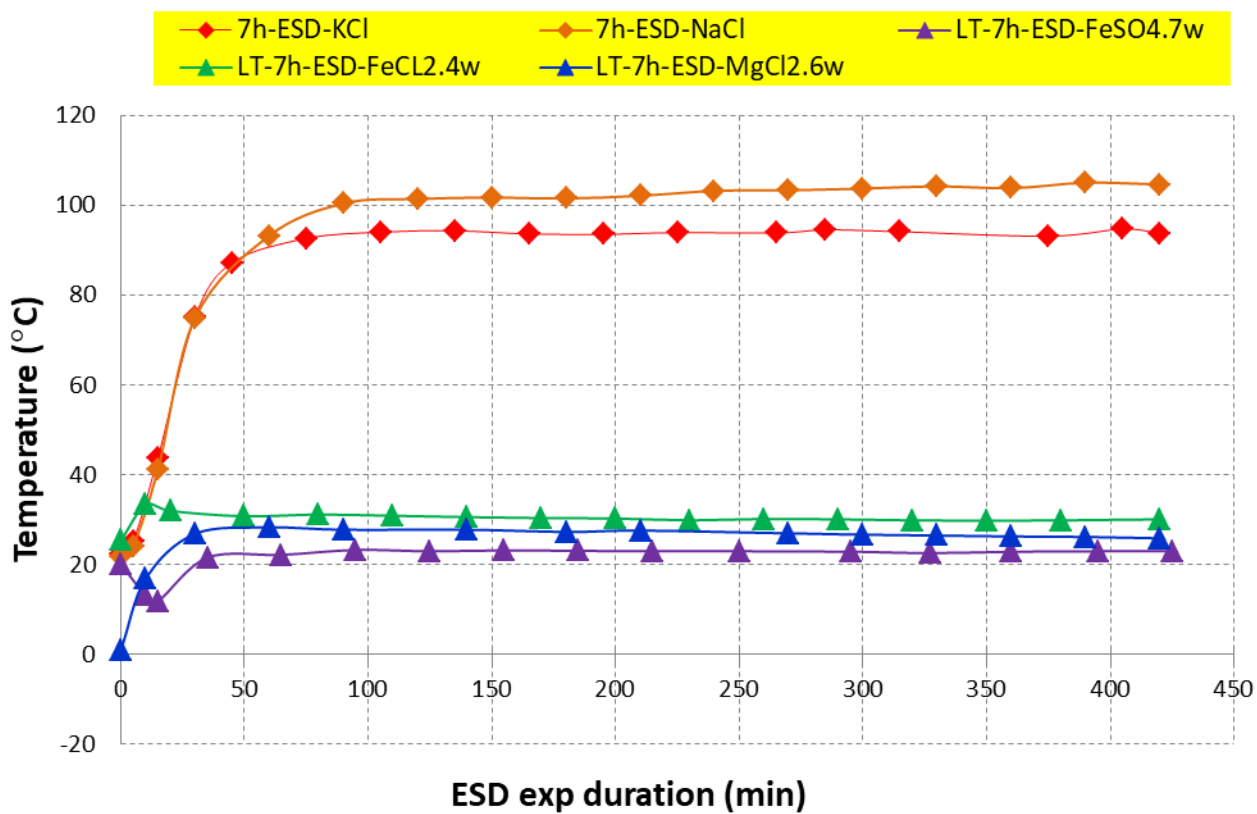


Figure 2. Examples of the equilibrated temperatures T_{eq} during ESD experiments on studied salts

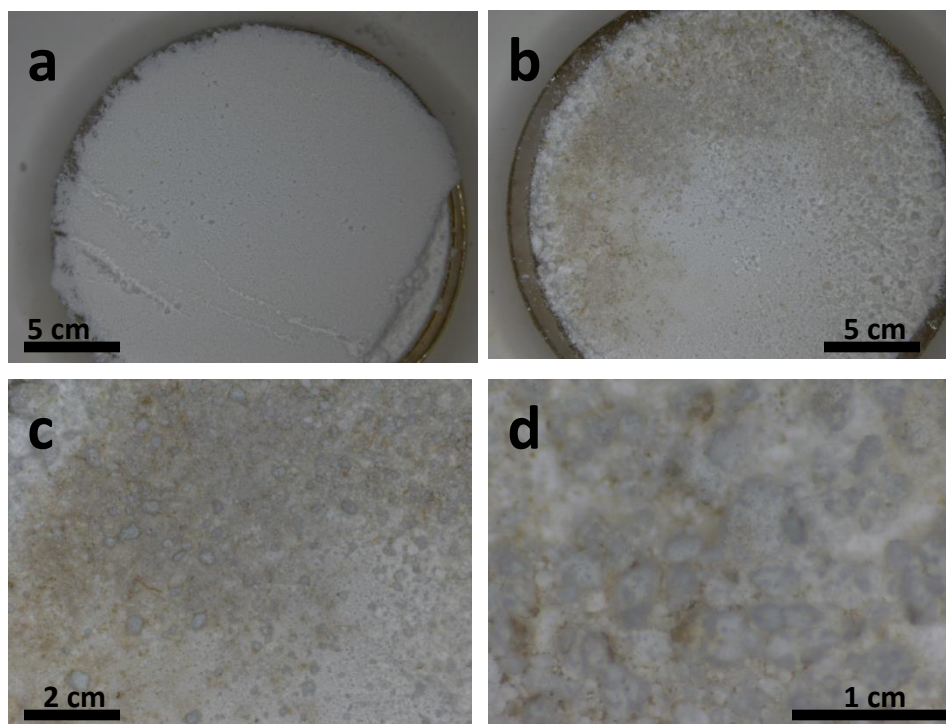


Figure 3. (a) starting $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$ in a SiO_2 cell; (b, c, d) LT-7h ESD product of $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$ (in a SiO_2 cell, and zoom-in)

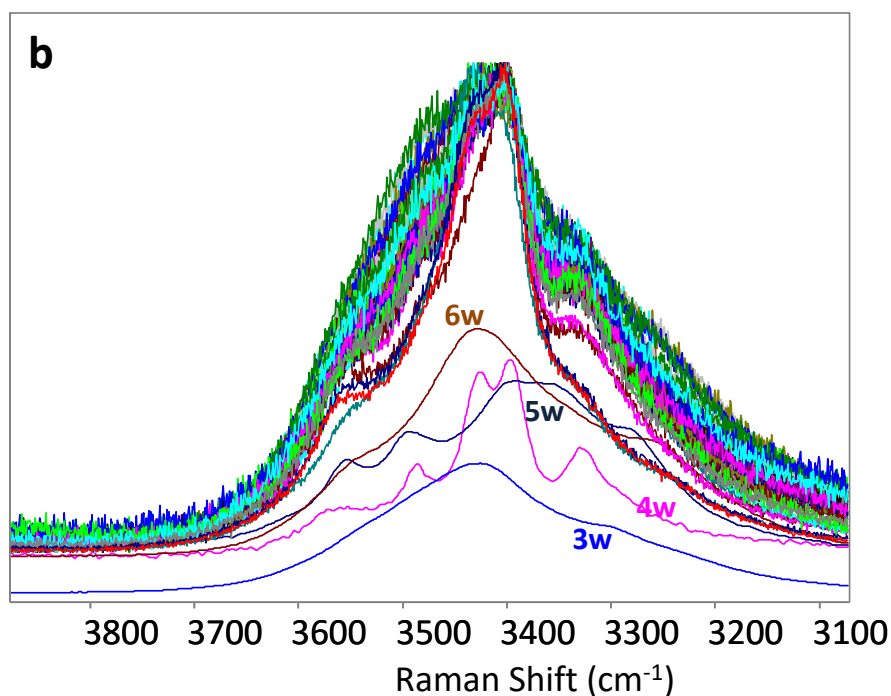
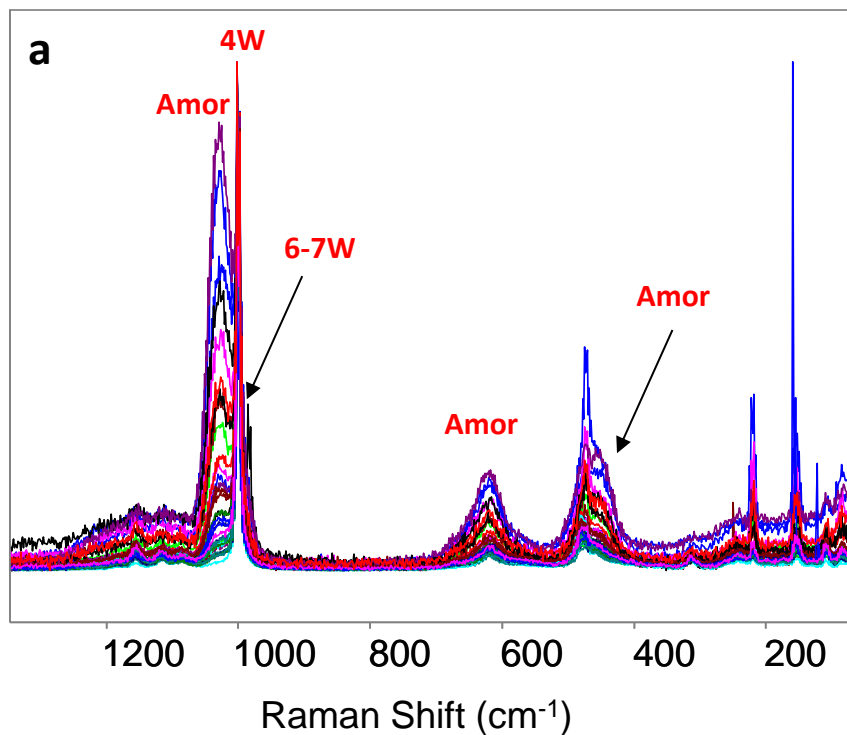


Figure 4. Raman spectra of 0.25h ESD products from $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ in (a) spectral range of fundamental vibrational modes; (b) spectral range of H_2O modes, which are compared with standard Raman spectra of $\text{MgSO}_4 \cdot 3\text{H}_2\text{O}$ (3w), $\text{MgSO}_4 \cdot 4\text{H}_2\text{O}$ (4w), $\text{MgSO}_4 \cdot 5\text{H}_2\text{O}$ (5w), $\text{MgSO}_4 \cdot 6\text{H}_2\text{O}$ (6w).

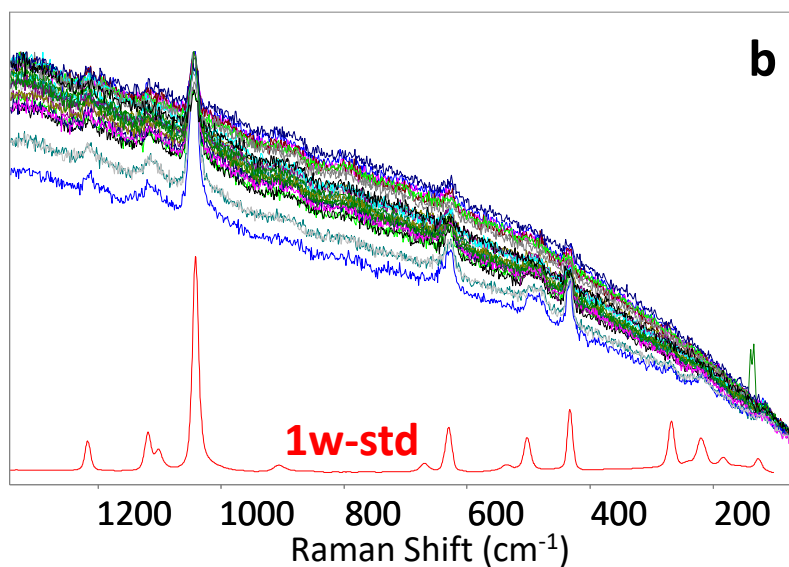
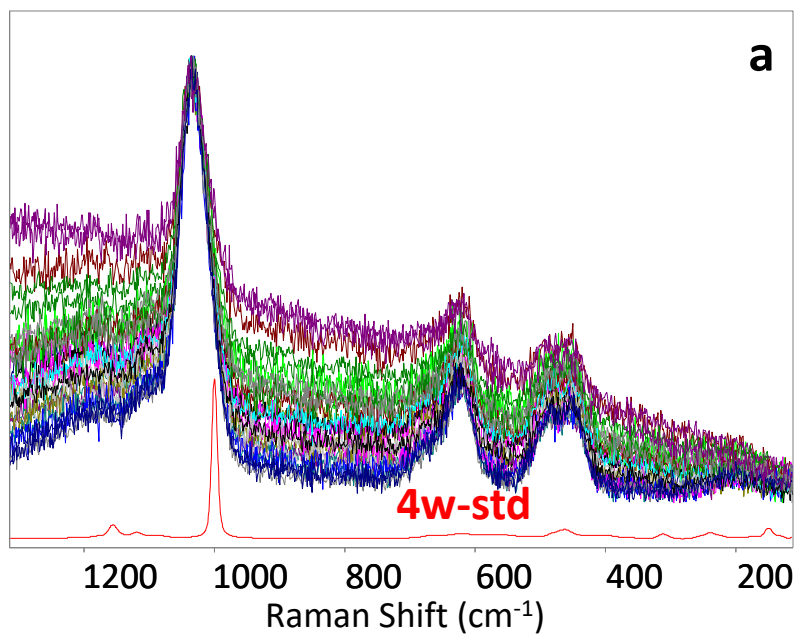


Figure 5. Raman spectra of 1.5h ESD products (a) from $\text{MgSO}_4 \cdot 4\text{H}_2\text{O}$ compared with standard spectrum (4w); (b) from $\text{MgSO}_4 \cdot \text{H}_2\text{O}$ compared with standard spectrum (1w)

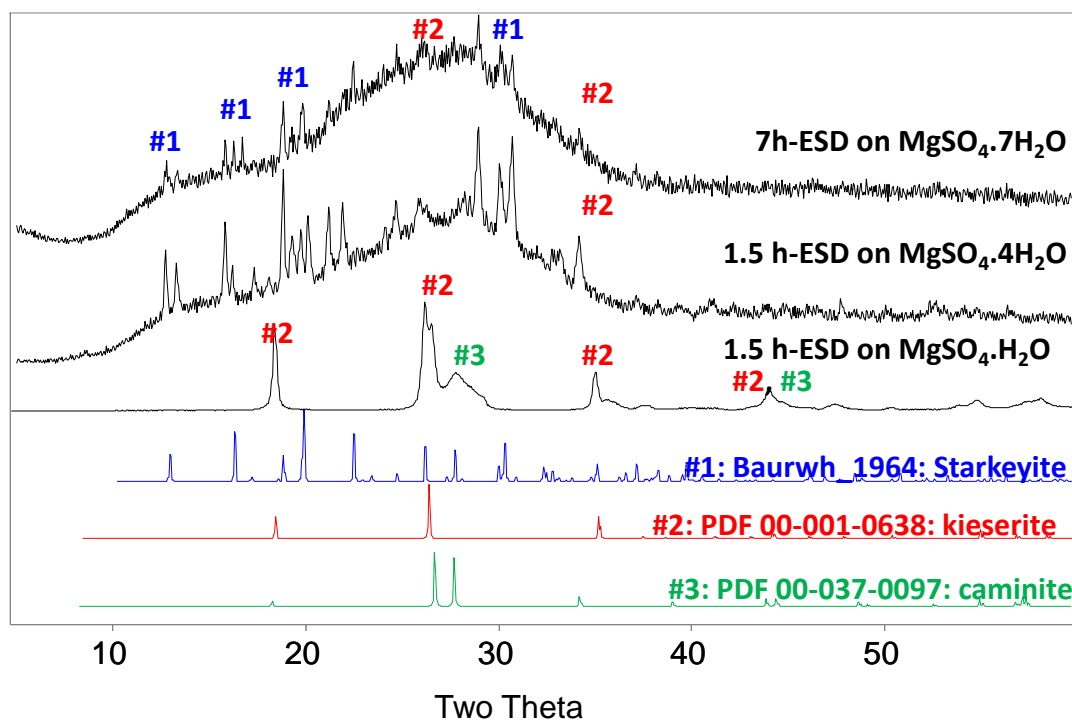


Figure 6. XRD results of ESD products from $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$, $\text{MgSO}_4 \cdot 4\text{H}_2\text{O}$, $\text{MgSO}_4 \cdot \text{H}_2\text{O}$, compared with standard XRD patterns of starkeyite ($\text{MgSO}_4 \cdot 4\text{H}_2\text{O}$), Kieserite ($\text{MgSO}_4 \cdot \text{H}_2\text{O}$), and caminite ($\text{MgSO}_4 \cdot x\text{Mg}(\text{OH})_2 \cdot (1-2x)\text{H}_2\text{O}$).

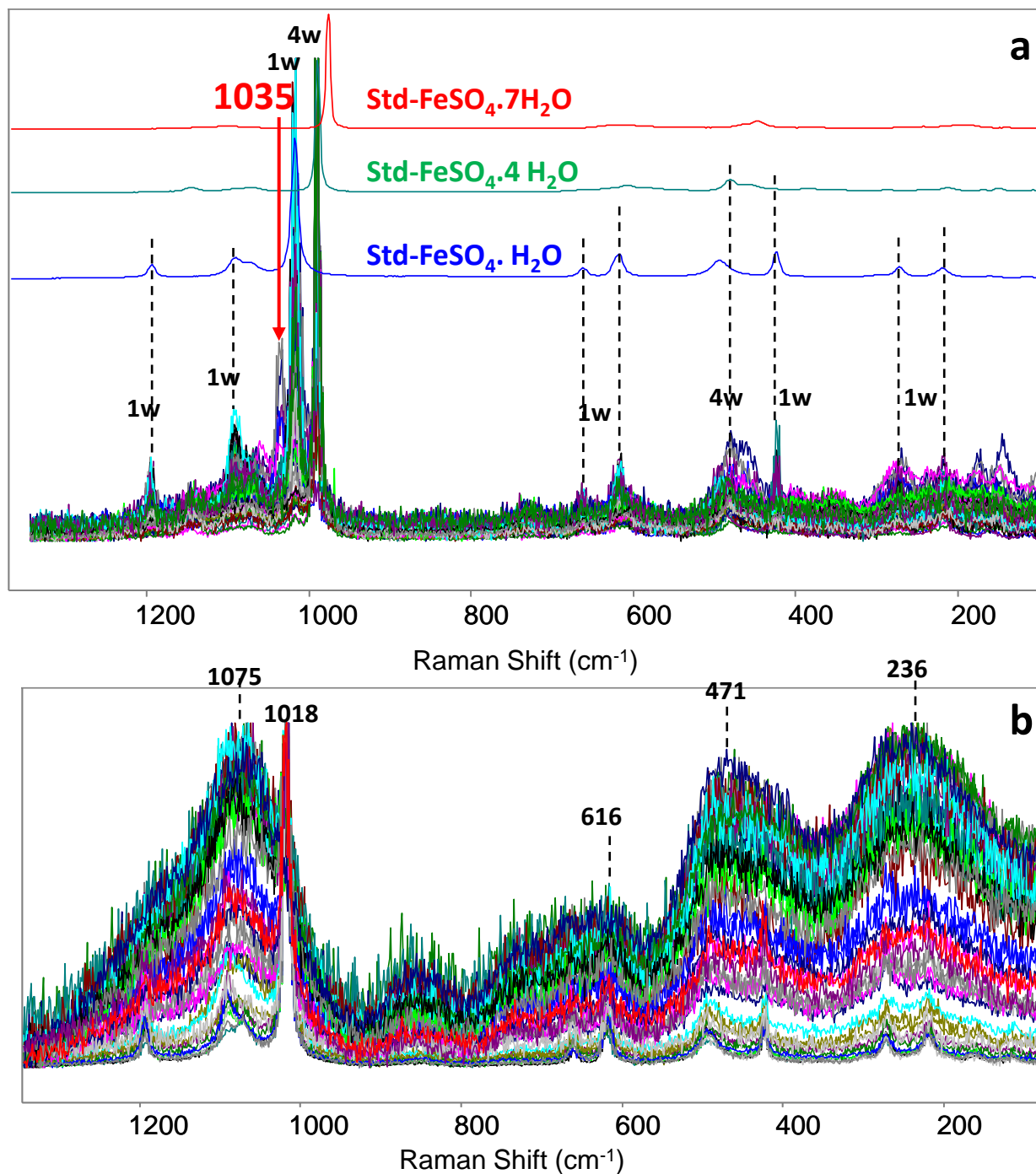


Figure 7. Raman spectra of LT-ESD products from $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ (using 1% laser power = 0.5 mW, $T_{\text{eq}} < 30^\circ\text{C}$); (a) First 60 spectra from a 99-spots Raman analysis on *as is* surface of 0.25h LT-ESD product, compared with standard Raman spectra; (b) first 60 spectra of a 120 Raman analysis on *as is* surface of LT-7h ESD product.

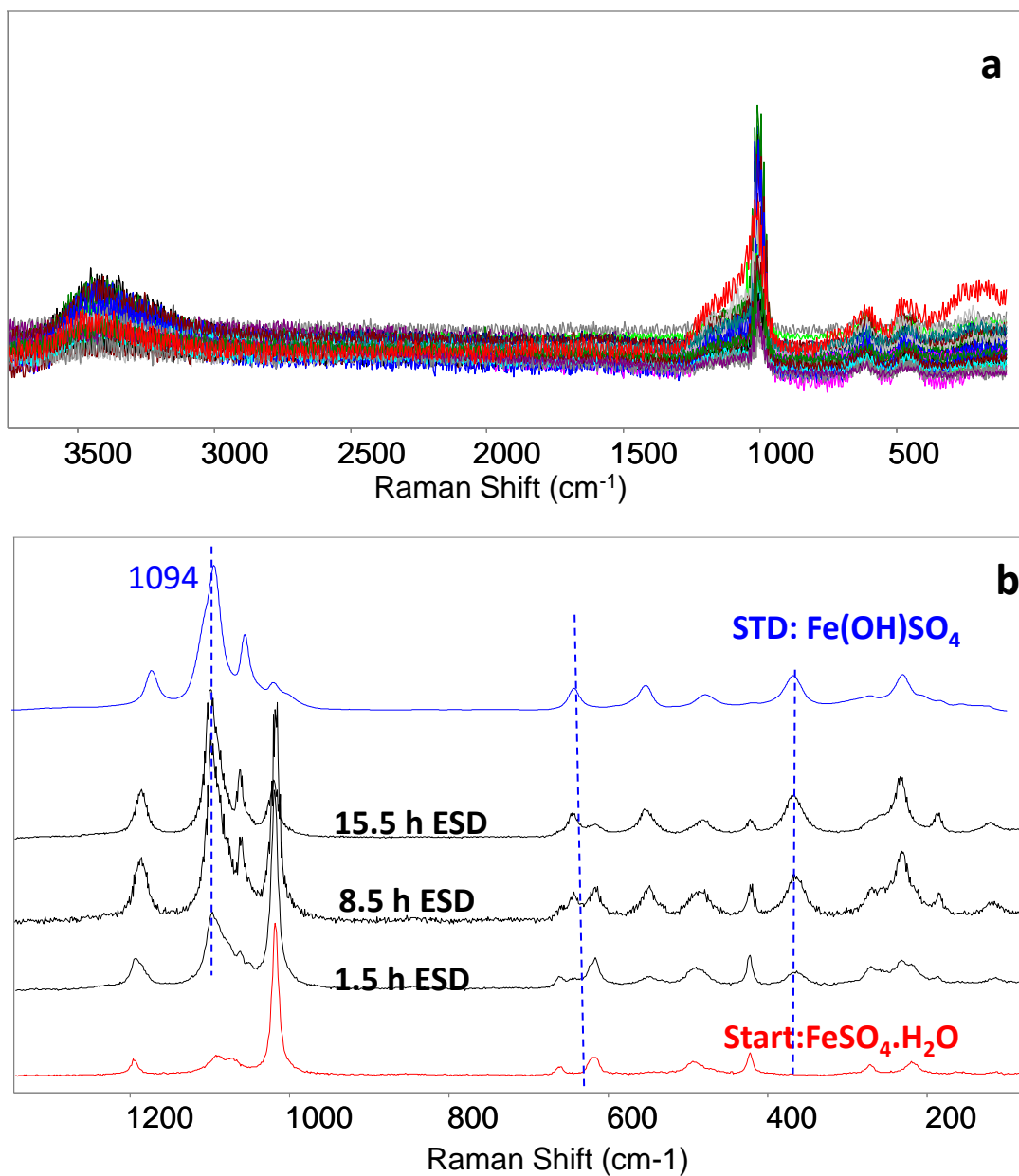


Figure 8. Raman spectra of ESD products: (a) 1.5h-ESD product from $\text{FeSO}_4 \cdot 4\text{H}_2\text{O}$; (b) products after 1.5h, 8.5h, 15.5h ESD process from $\text{FeSO}_4 \cdot \text{H}_2\text{O}$, compared with standard spectra.

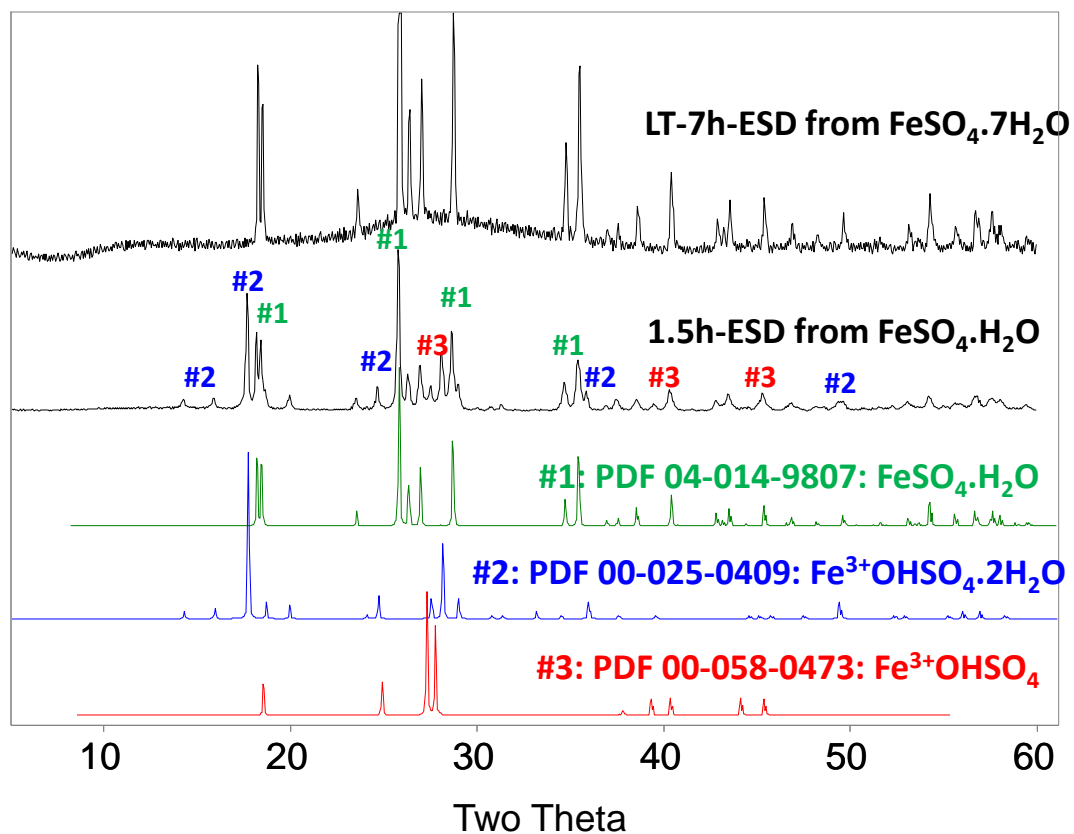


Figure 9. XRD result of LT-7h ESD product (bulk sample) from melanterite FeSO₄·7H₂O and szomolnokite FeSO₄·H₂O, compared with standard.

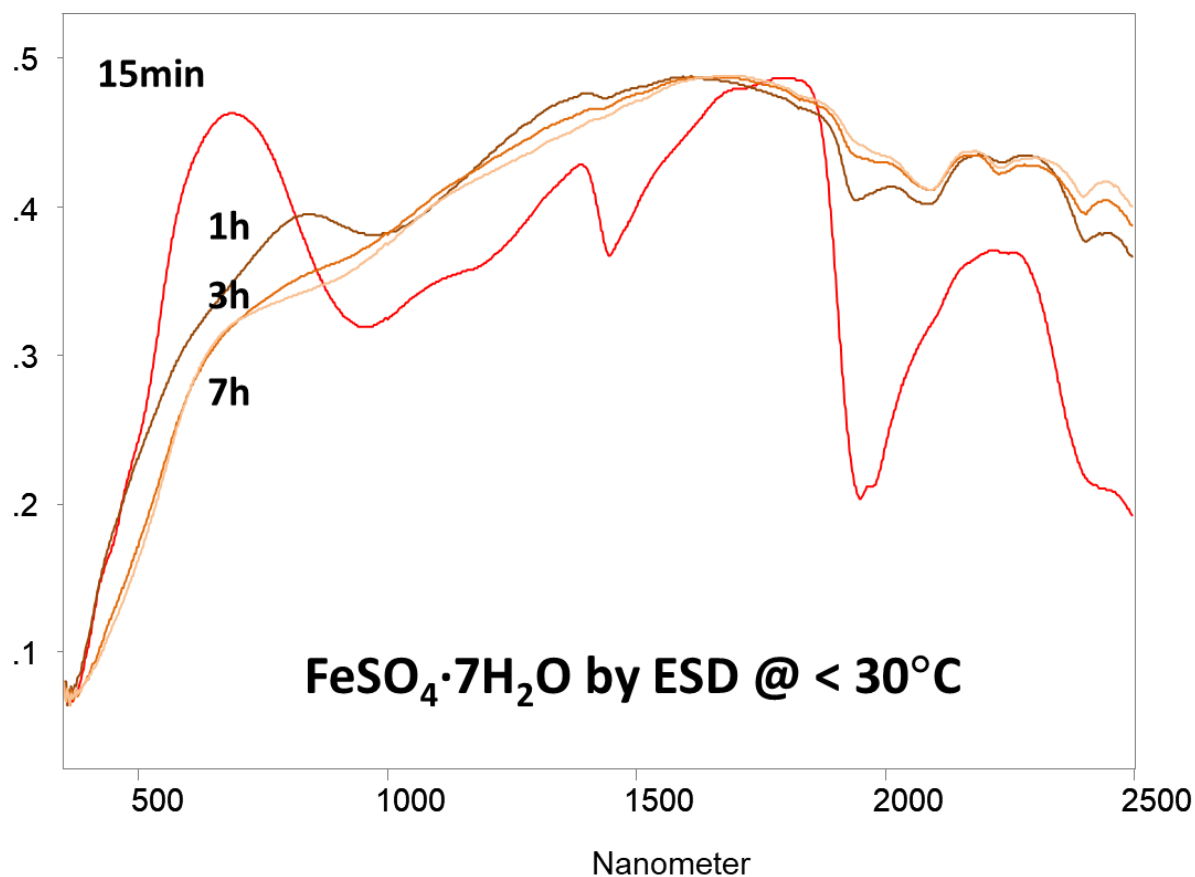


Figure 10. VNIR spectra on as is surfaces of 0.25h, 1h, 3h, 7h LT-ESD ($T_{\text{eq}} < 30^\circ\text{C}$) from melanterite $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$.