Reference spectra

EDXRD spectra of materials seen during the *in situ* experiments (a) gypsum – E4, 5 minutes (b) bassanite – E4, 23 minutes (c) monetite C4 – 452 minutes and (d) hydroxyapatite – E4, 101 minutes where = bottom detector and = middle detector, with hkl values labelled.
100°C, Edge

Contour plot of 100°C reaction on the edge, bottom detector.

Contour plot of 100°C reaction on the edge, middle detector.
Kinetic plot of phases at 100°C on the edge, where ■ = gypsum and ▲ = hydroxyapatite.

Peak position and peak width for the reaction at 100°C on the edge, where ■ = d spacing (Å) and ▲ = peak width (keV).
120°C, Edge

Contour plot of 120°C reaction on the edge, bottom detector.

Contour plot of 120°C reaction on the edge, middle detector.
Kinetic plot of phases at 120°C on the edge, where ■ = gypsum and ▲ = hydroxyapatite.

Peak position and peak width for the reaction at 120°C on the edge, where ■ = d spacing (Å) and ▲ = peak width (keV)
130°C, Edge

Contour plot of 130°C reaction on the edge, bottom detector.

Contour plot of 130°C reaction on the edge, middle detector.
Kinetic plot of phases at 130°C on the edge, where ■ = gypsum, ● = bassanite and ▲ = hydroxyapatite

Peak position and peak width for the reaction at 130°C on the edge, where ■ = d spacing (Å) and ▲ = peak width (keV).
140°C, Edge

Contour plot of 140°C reaction on the edge, bottom detector.

Contour plot of 140°C reaction on the edge, middle detector.
Kinetic plot of phases at 140°C on the edge, where ■ = gypsum, ● = bassanite and ▲ = hydroxyapatite.

Peak position and peak width for the reaction at 140°C on the edge, where ■ = d spacing (Å) and ▲ = peak width (keV).
160°C, Edge

Contour plot of 160°C reaction on the edge, bottom detector.

Contour plot of 160°C reaction on the edge, middle detector.
Kinetic plot of phases at 160°C on the edge, where ■ = gypsum, ● = bassanite and ▲ = hydroxyapatite.

Peak position and peak width for the reaction at 160°C on the edge, where ■ = d spacing (Å) and ▲ = peak width (keV).
180°C, Edge

Contour plot of 180°C reaction on the edge, bottom detector.

Contour plot of 180°C reaction on the edge, middle detector.
Kinetic plot of phases at 180°C on the edge, where ■ = gypsum, ○ = bassanite and ▲ = hydroxyapatite.

Peak position and peak width for the reaction at 180°C on the edge, where ■ = d spacing (Å) and ▲ = peak width (keV).
120°C, Core

Contour plot of 120°C reaction in the core, bottom detector.

Contour plot of 120°C reaction in the core, middle detector.
Kinetic plot of phases at 120°C in the core, where ■ = gypsum and ● = Bassanite.

Peak position and peak width for the reaction at 120°C in the core, where ■ = d spacing (Å) and ▲ = peak width (keV).
140°C, Core

Contour plot of 140°C reaction in the core, bottom detector.

Contour plot of 140°C reaction in the core, middle detector.
Kinetic plot of phases at 140°C in the core, where ■ = gypsum and ● = bassanite and ◇ = monetite.

Peak position and peak width for the reaction at 140°C in the core, where ■ = d spacing (Å) and ▲ = peak width (keV).
180°C, Core

Contour plot of 180°C reaction in the core, bottom detector.

Contour plot of 180°C reaction in the core, middle detector.
Kinetic plot of phases at 180°C in the core, where ■ = gypsum and ● = Bassanite.

Peak position and peak width for the reaction at 180°C in the core, where ■ = d spacing (Å) and ▲ = peak width (keV).