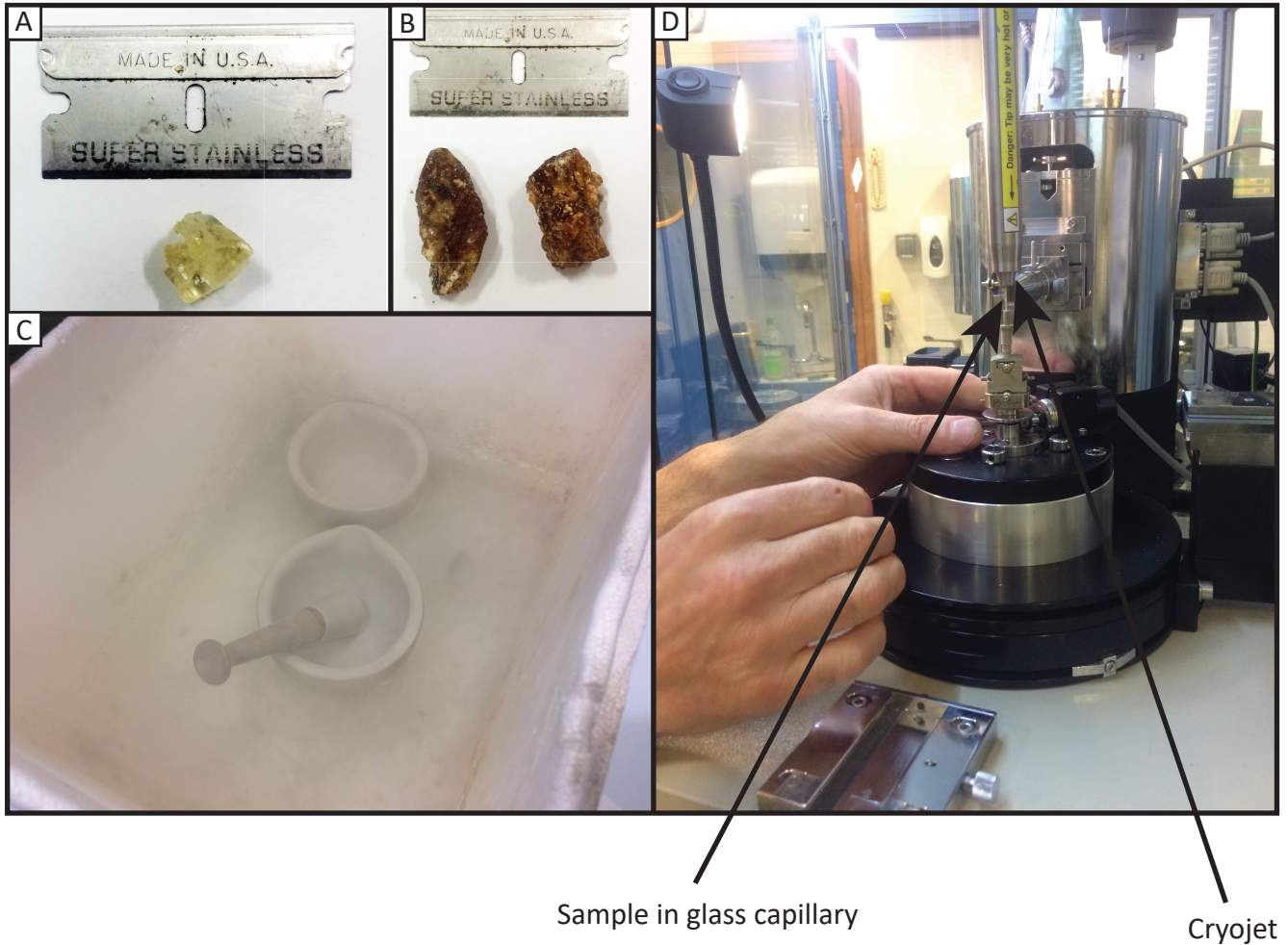
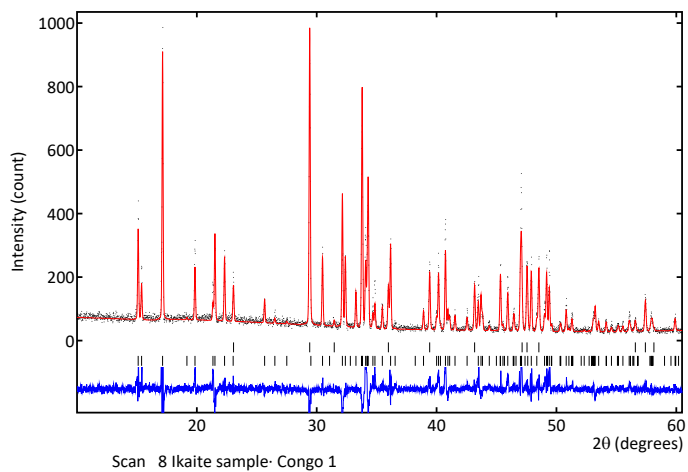
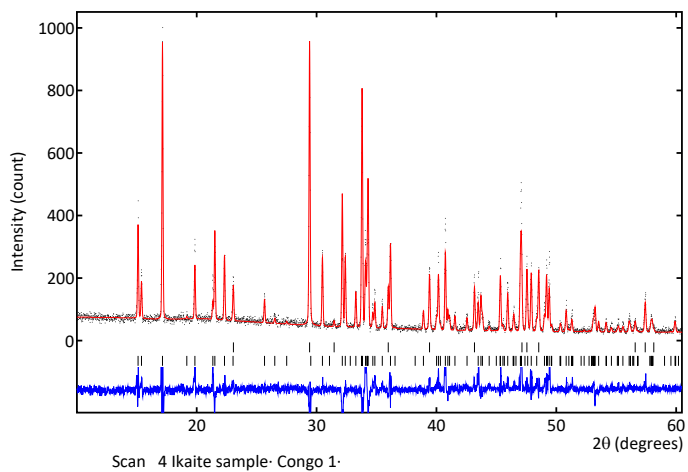
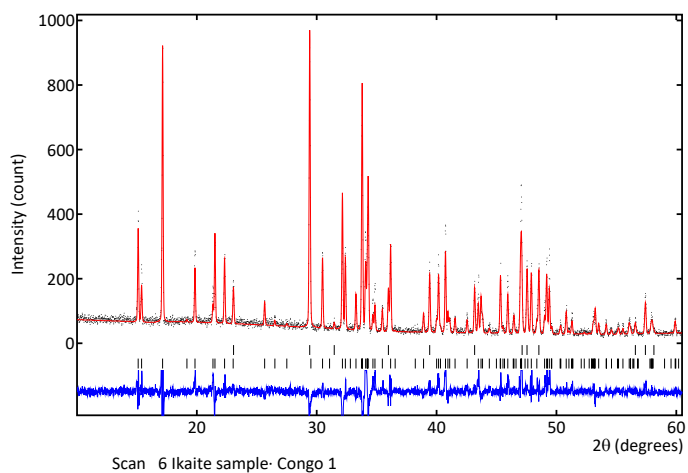
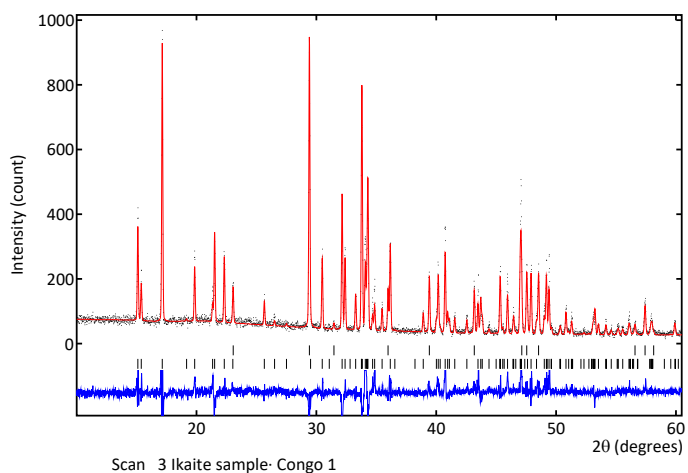
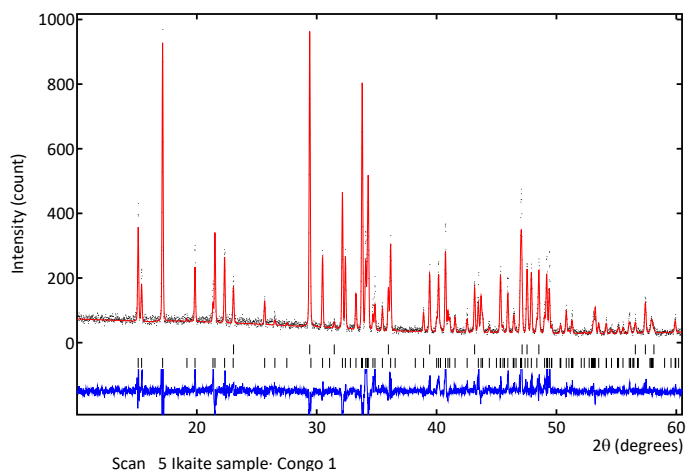
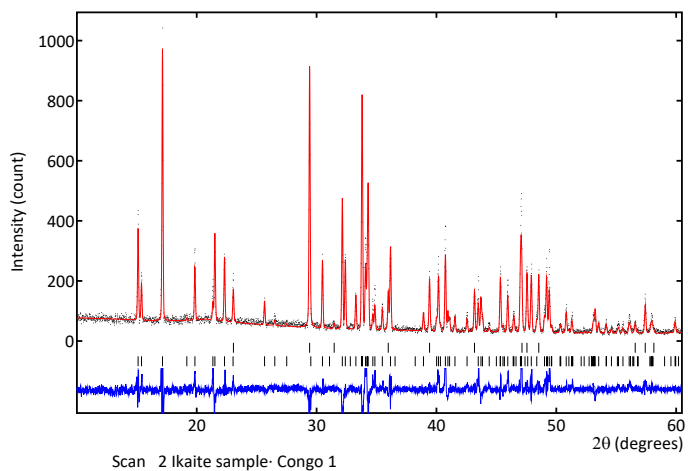
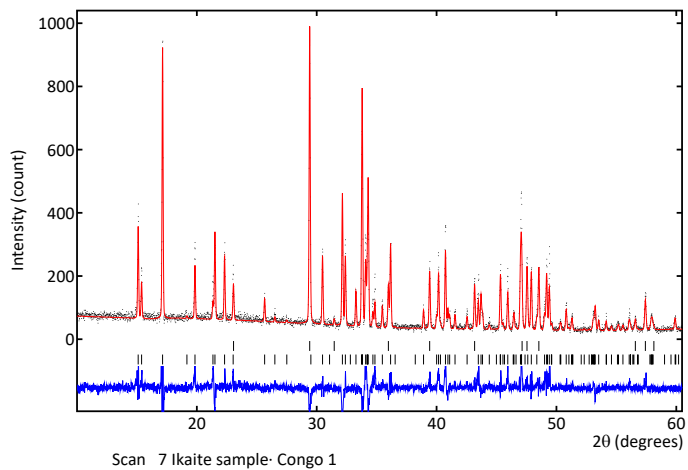
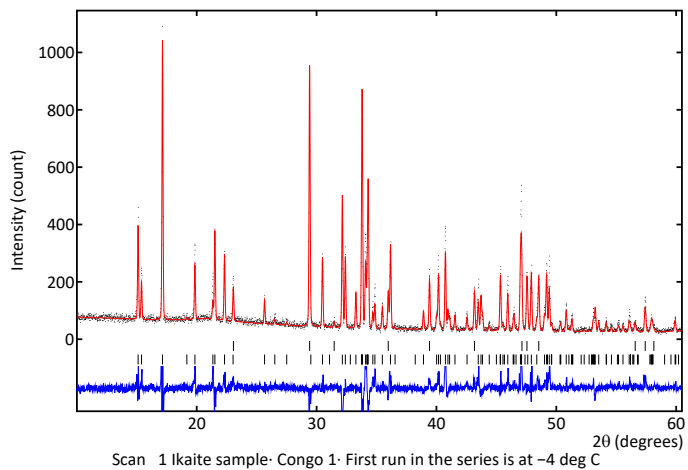


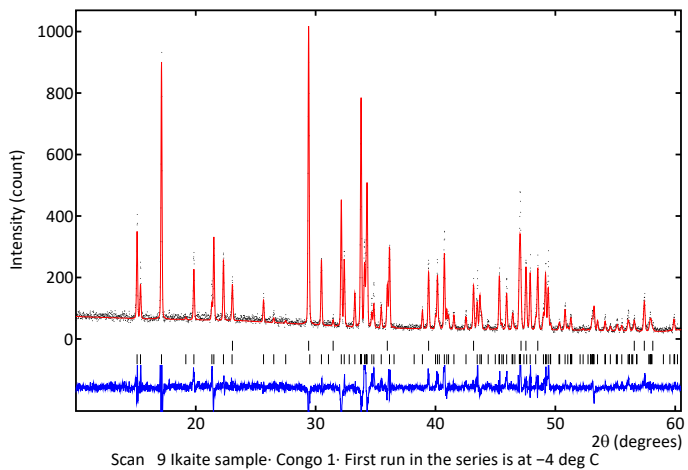
Supplementary Figures



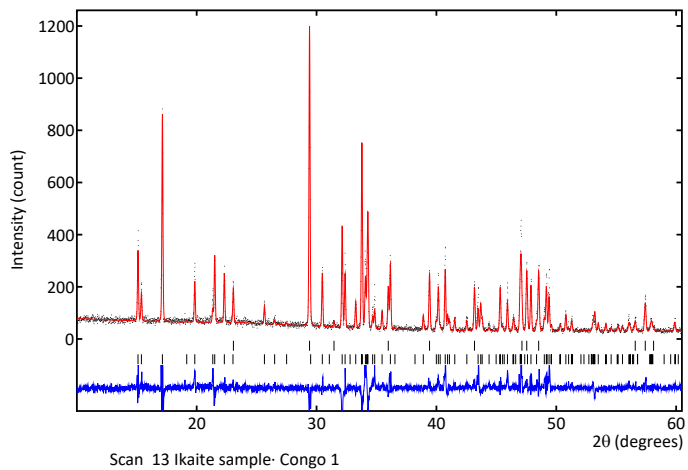
Supplementary Figure S1: Ikaite sample preparation for powder X-ray diffraction. (A) and (B) Ikaite samples taken straight from the freezer. **(C)** Powdering the ikaite in a polystyrene box flooded with liquid nitrogen. The mortar and pestle were soaked in liquid nitrogen to bring them down to $-40\text{ }^{\circ}\text{C}$ before the ikaite sample was added, and then powdered using the mortar and pestle. The second mortar was used to place the glass capillaries in and pour on liquid nitrogen in order to cool them. **(D)** The powdered sample being mounted in the diffractometer under the cryojet, which was set at $-6\text{ }^{\circ}\text{C}$.

Congo Fan 1

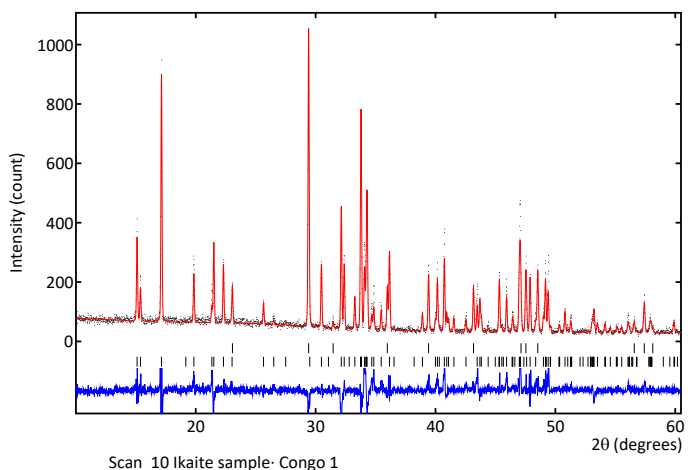




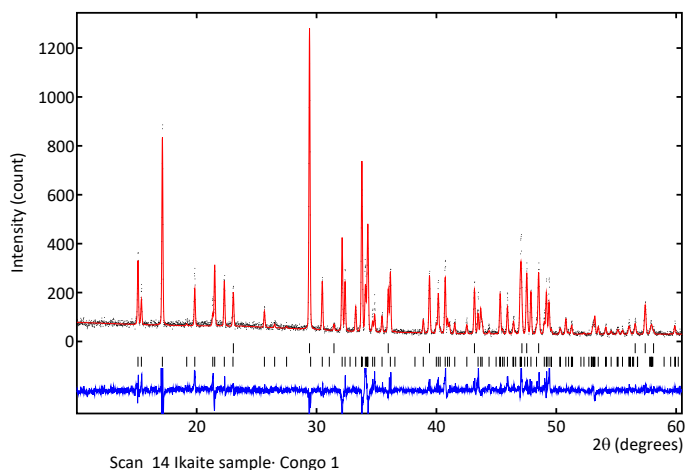
Scan 9 Ikaite sample: Congo 1: First run in the series is at -4 deg C



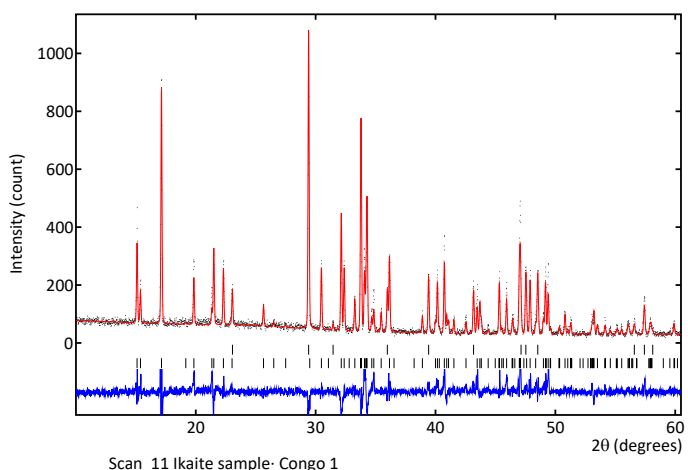
Scan 13 Ikaite sample: Congo 1



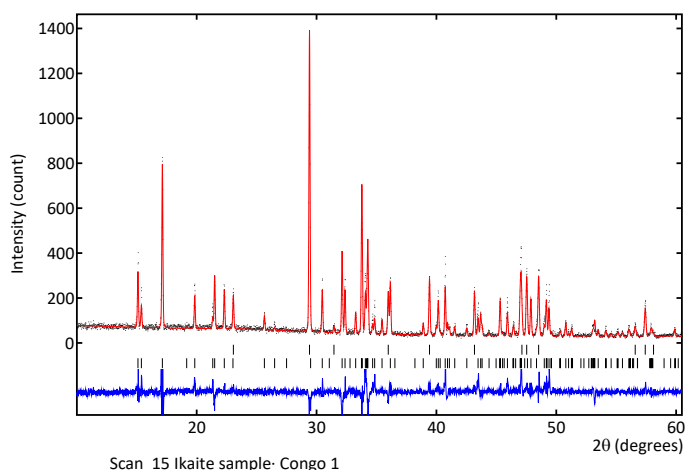
Scan 10 Ikaite sample: Congo 1



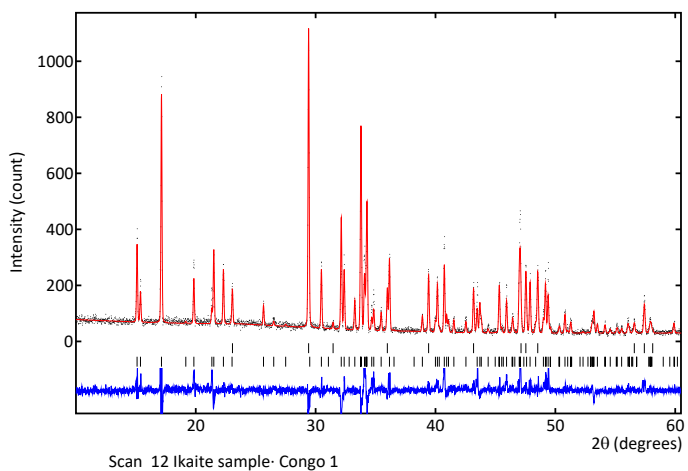
Scan 14 Ikaite sample: Congo 1



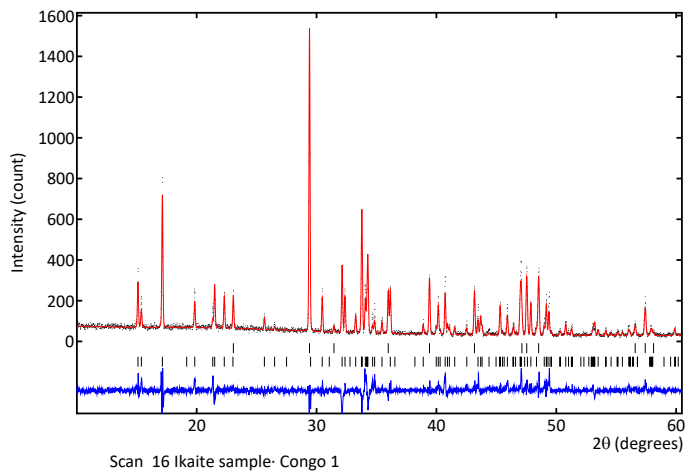
Scan 11 Ikaite sample: Congo 1



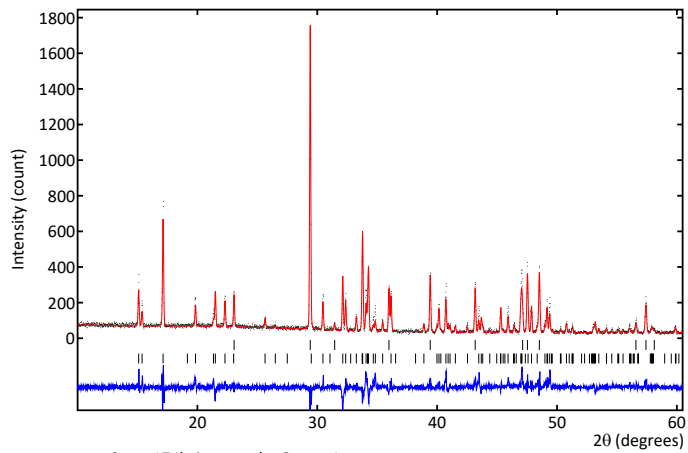
Scan 15 Ikaite sample: Congo 1



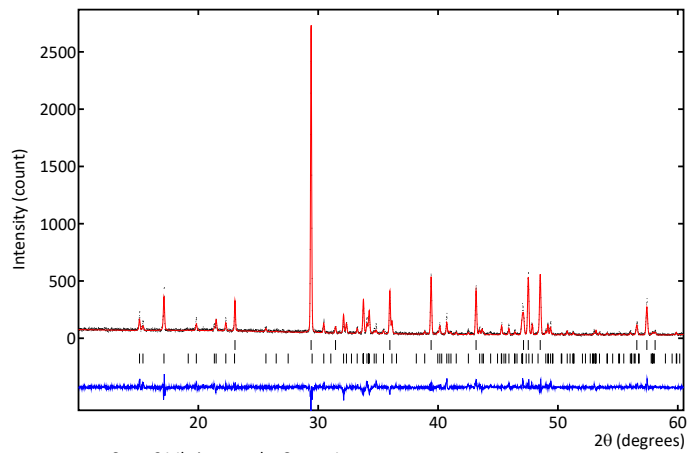
Scan 12 Ikaite sample: Congo 1



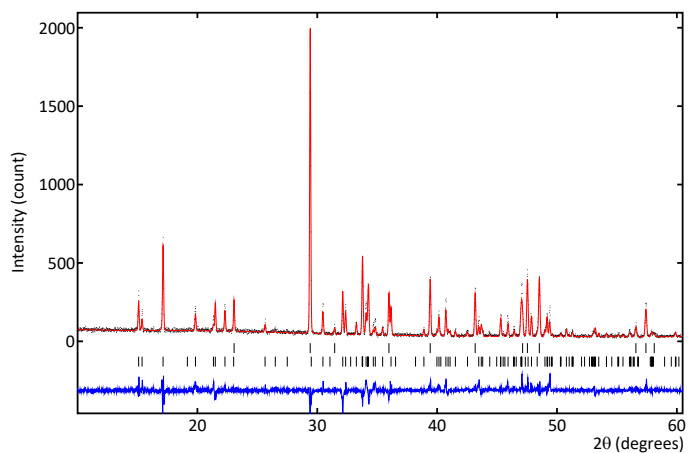
Scan 16 Ikaite sample: Congo 1



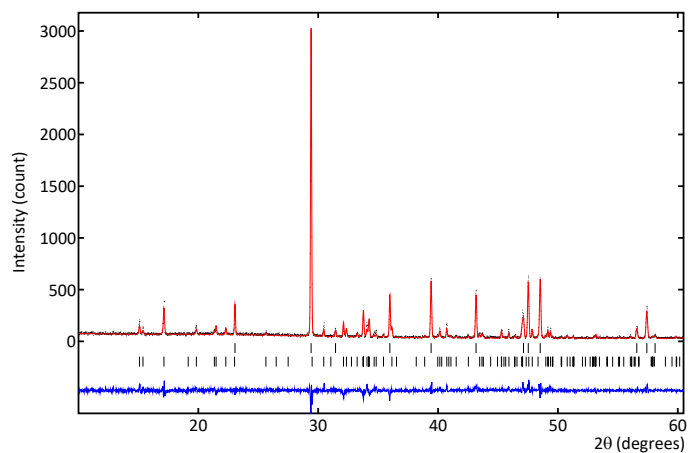
Scan 17 Ikaite sample- Congo 1



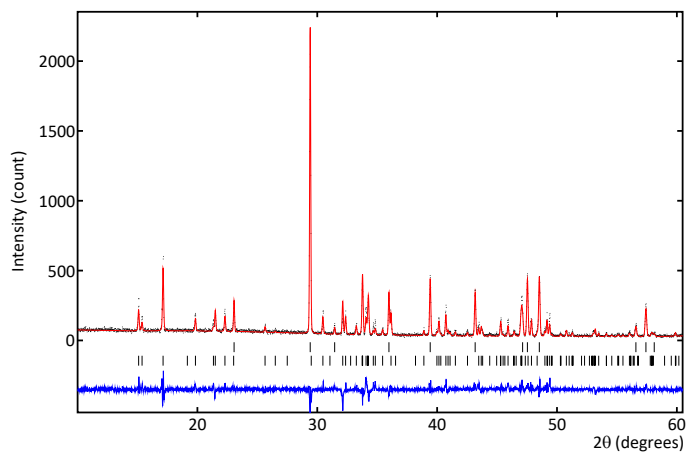
Scan 21 Ikaite sample- Congo 1



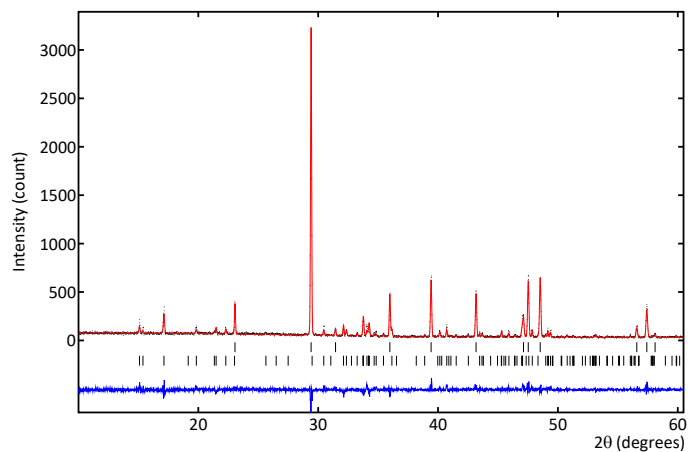
Scan 18 Ikaite sample- Congo 1



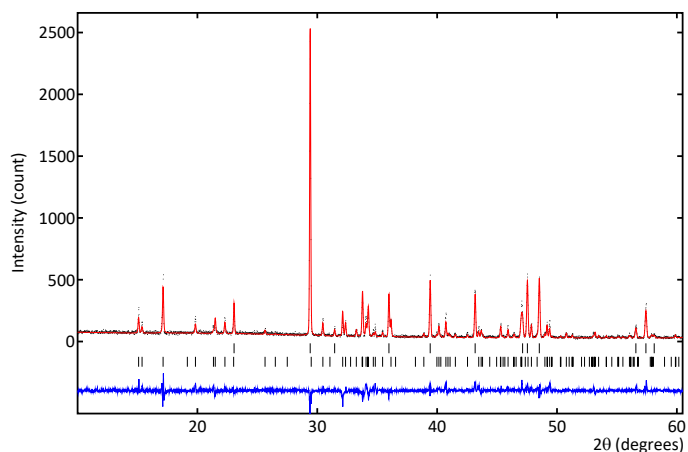
Scan 22 Ikaite sample- Congo 1



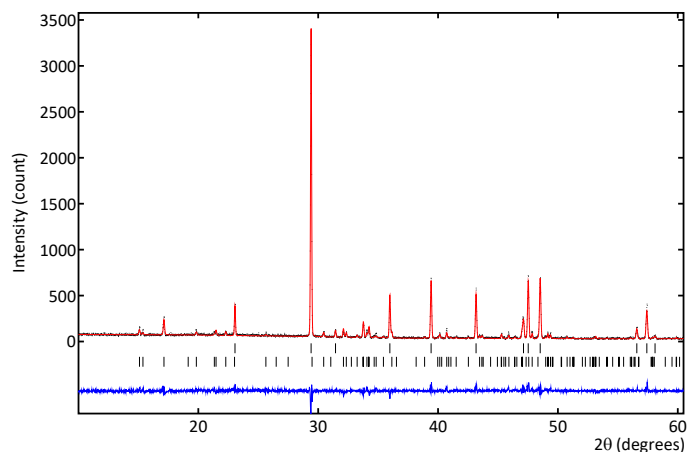
Scan 19 Ikaite sample- Congo 1



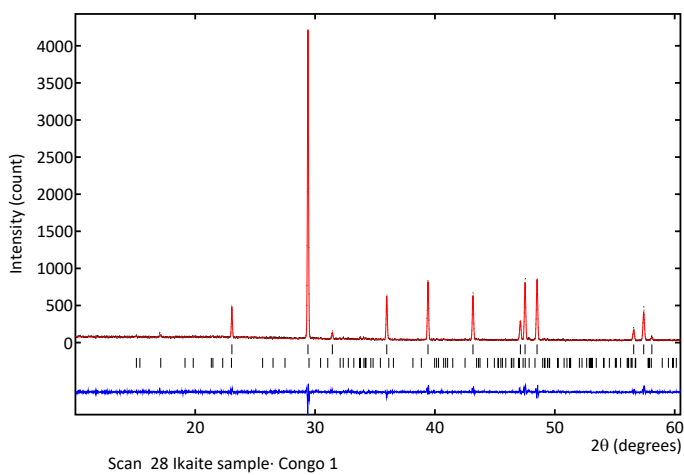
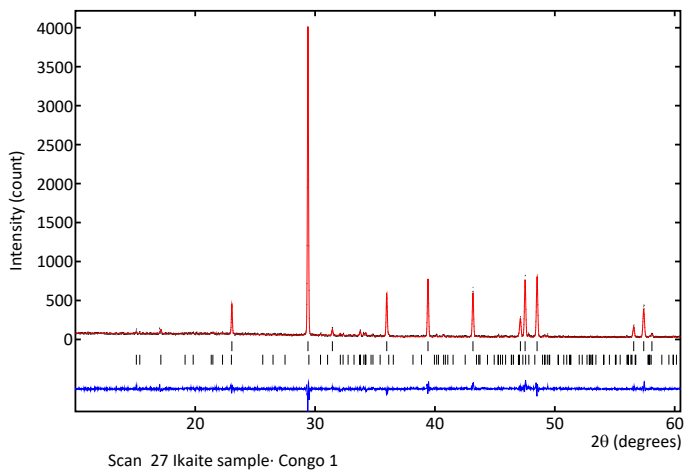
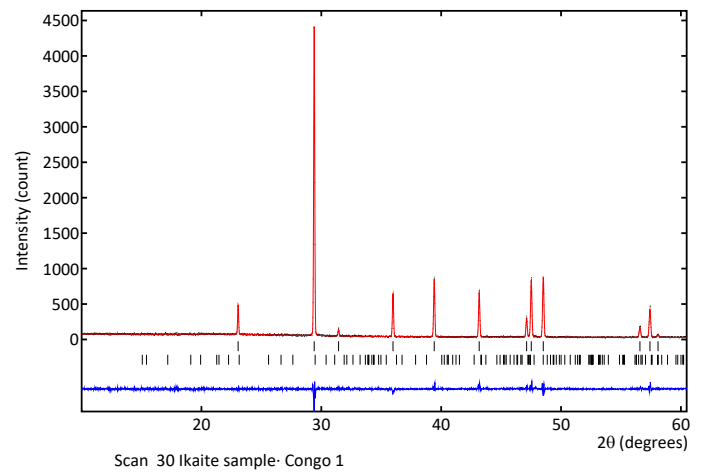
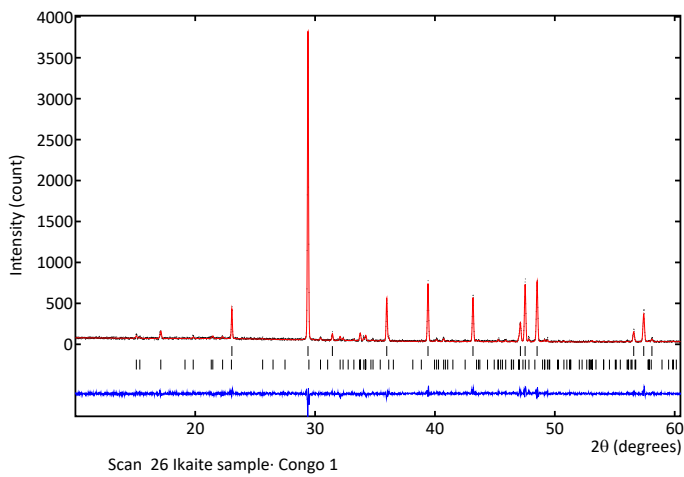
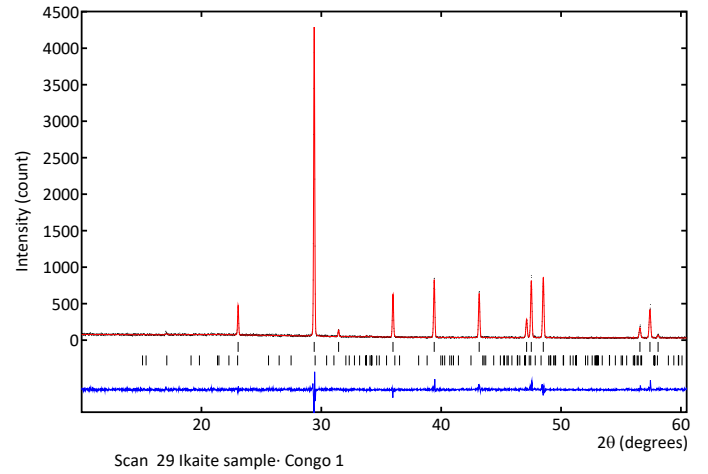
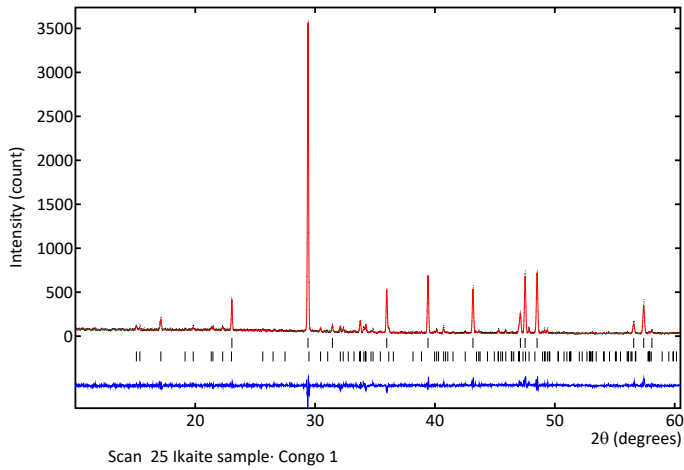
Scan 23 Ikaite sample- Congo 1



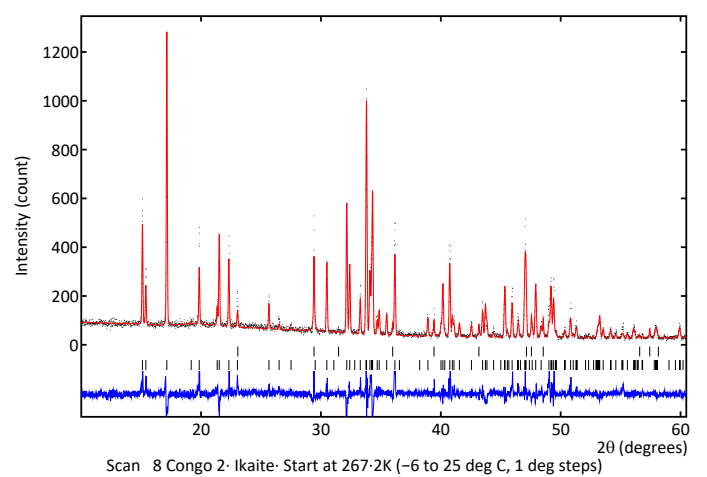
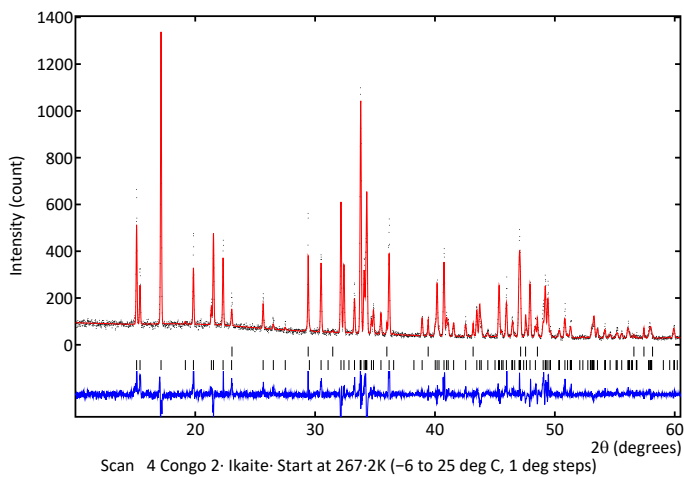
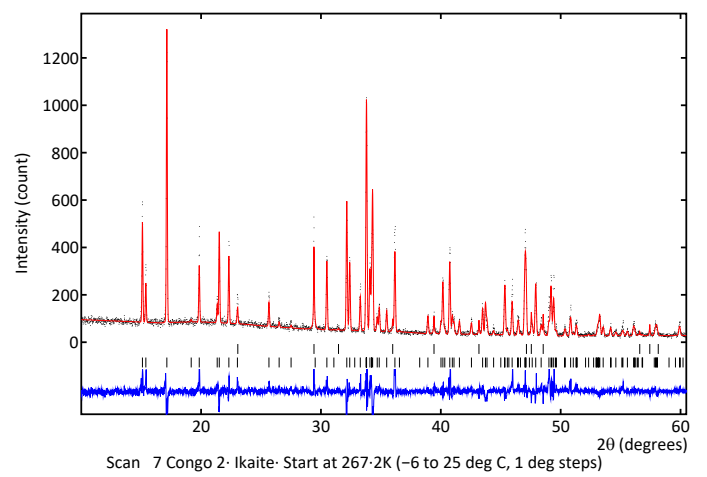
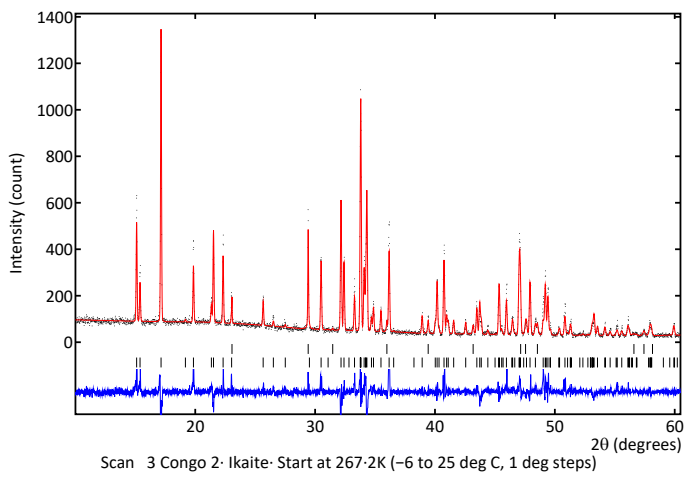
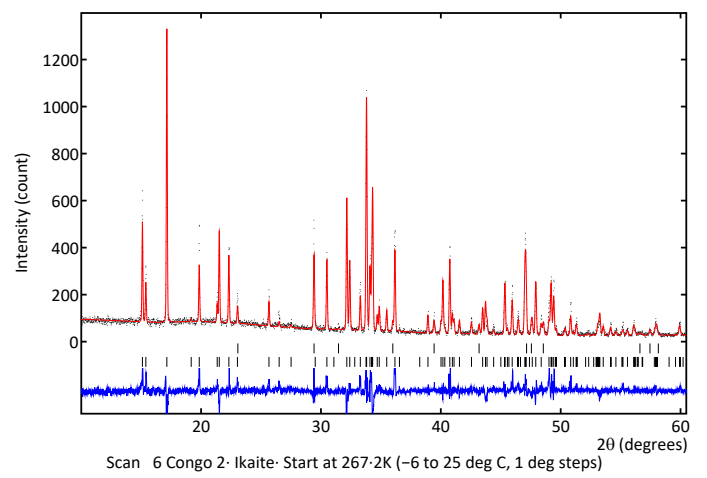
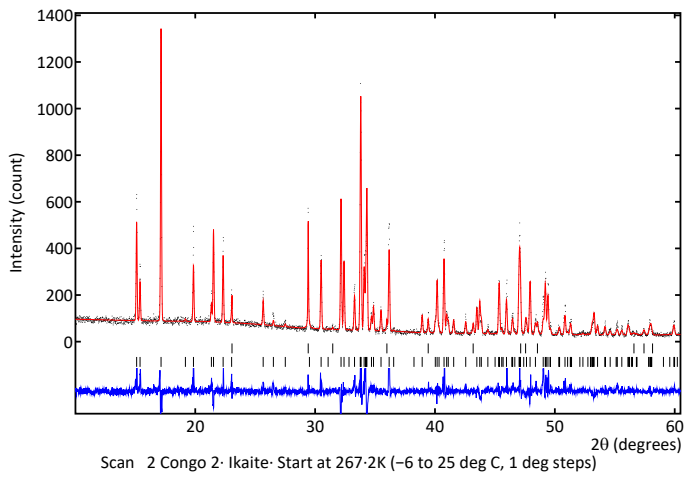
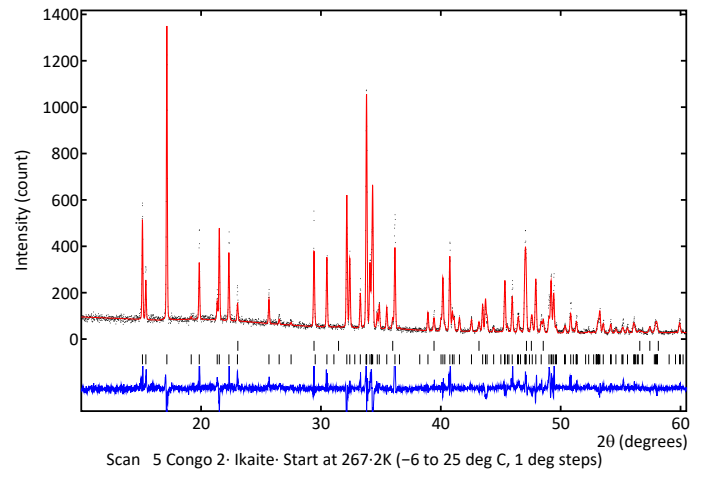
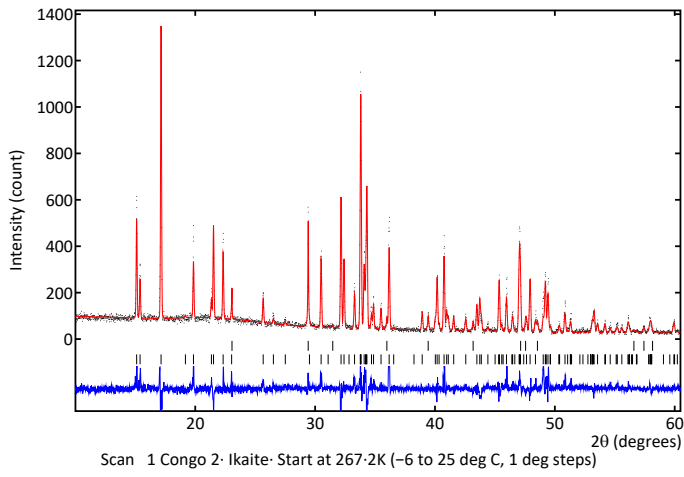
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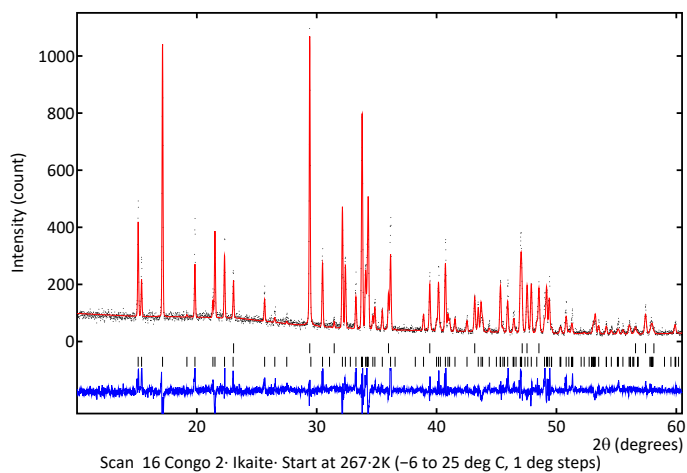
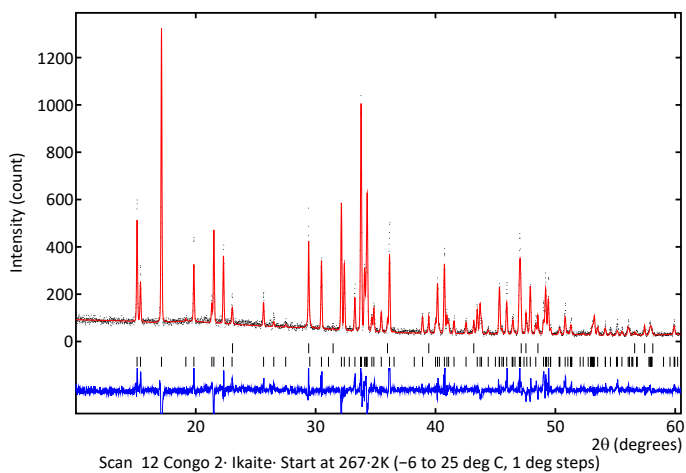
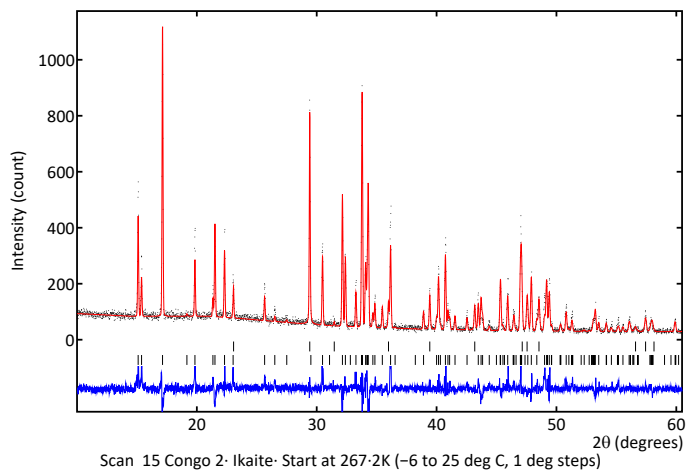
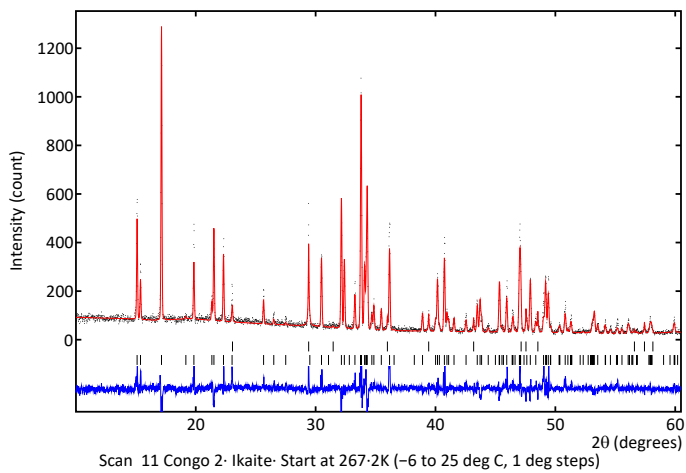
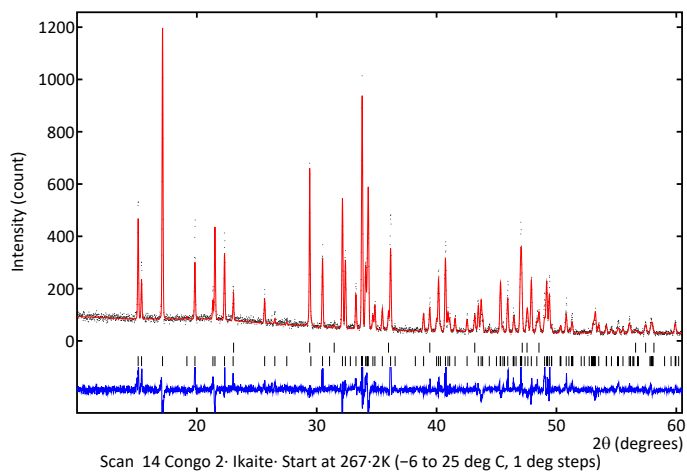
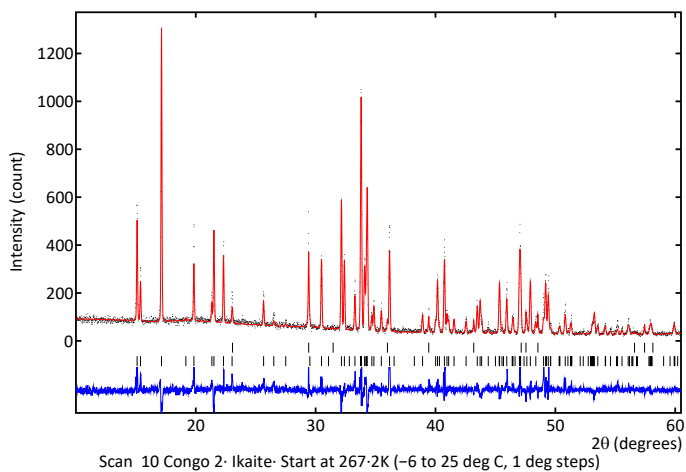
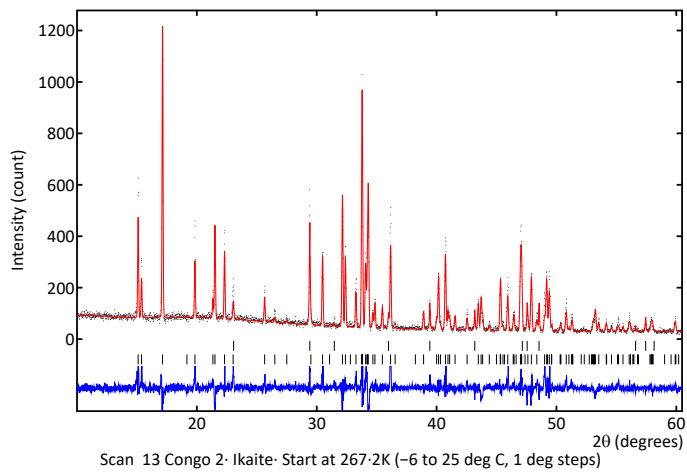
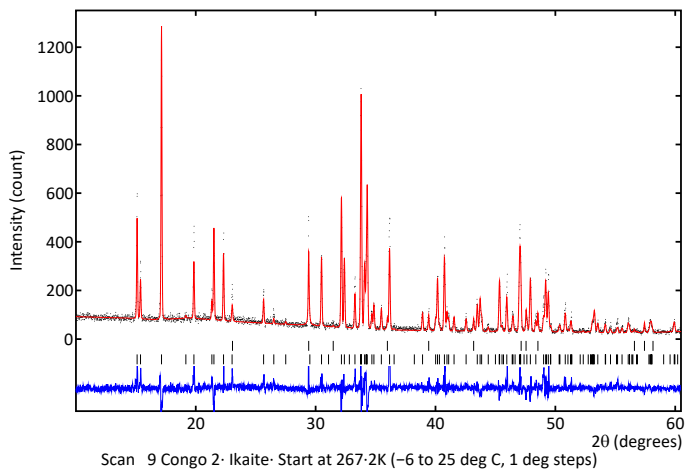


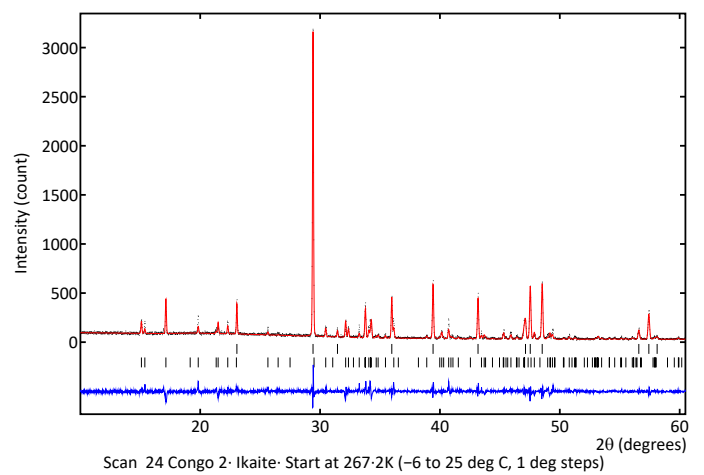
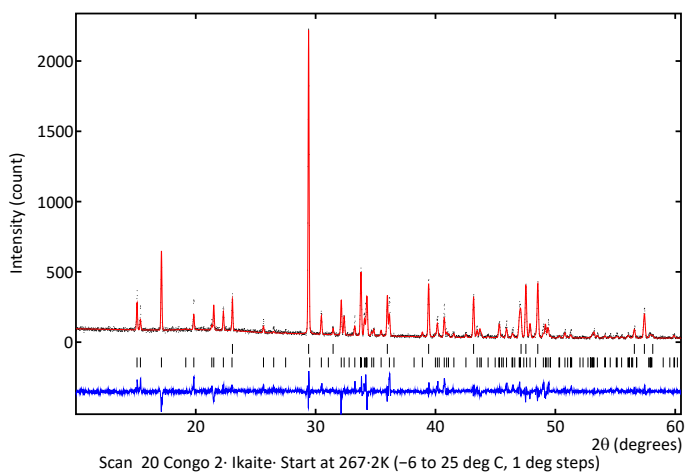
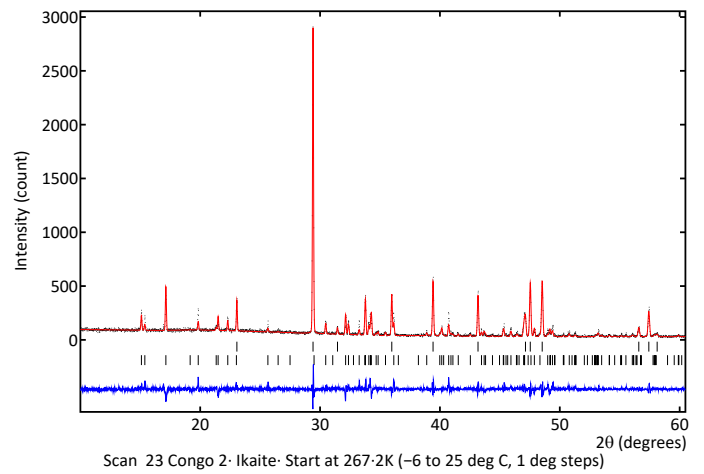
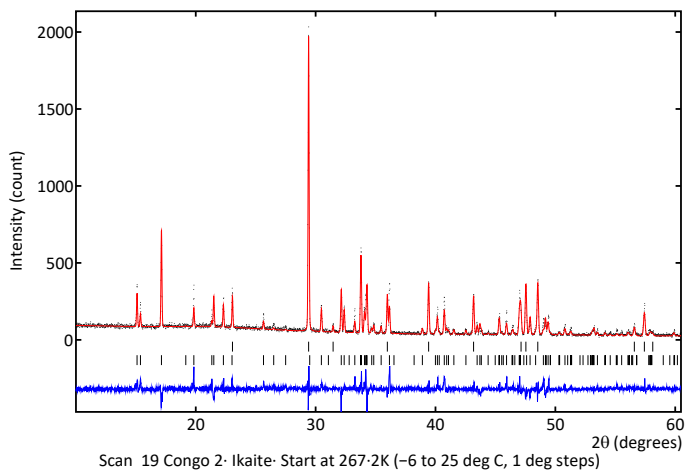
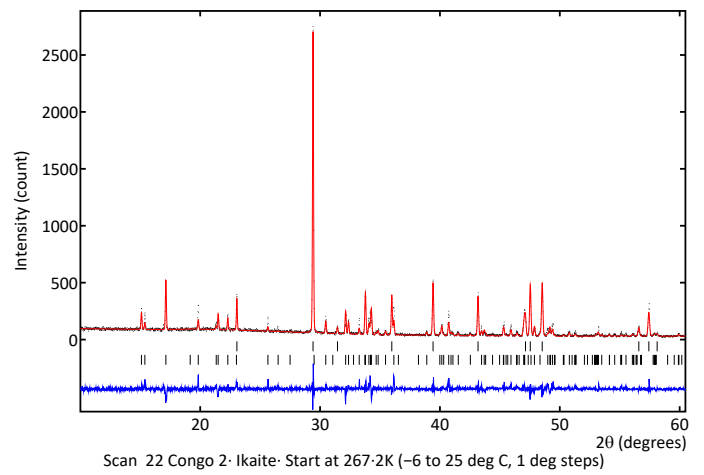
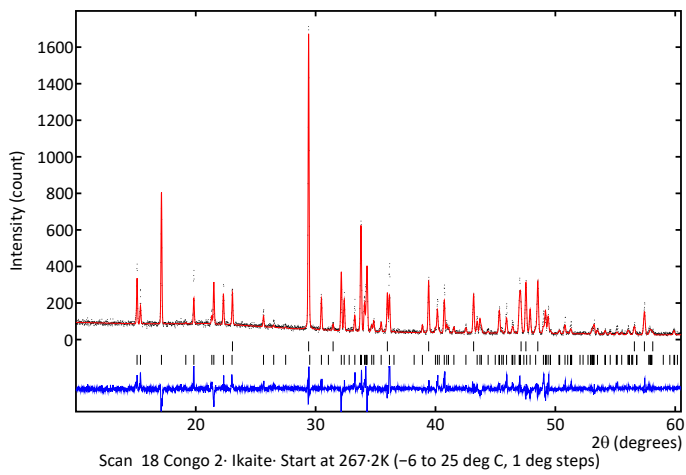
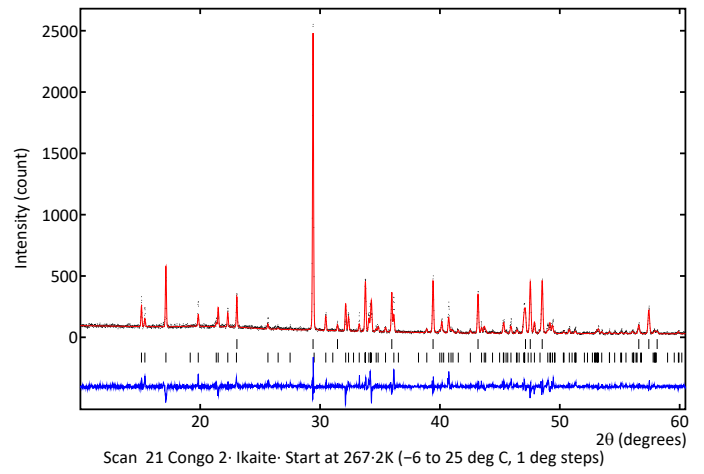
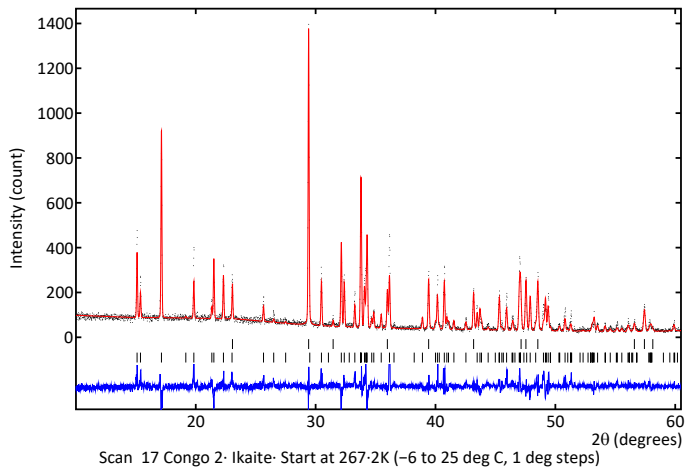
Scan 24 Ikaite sample- Congo 1

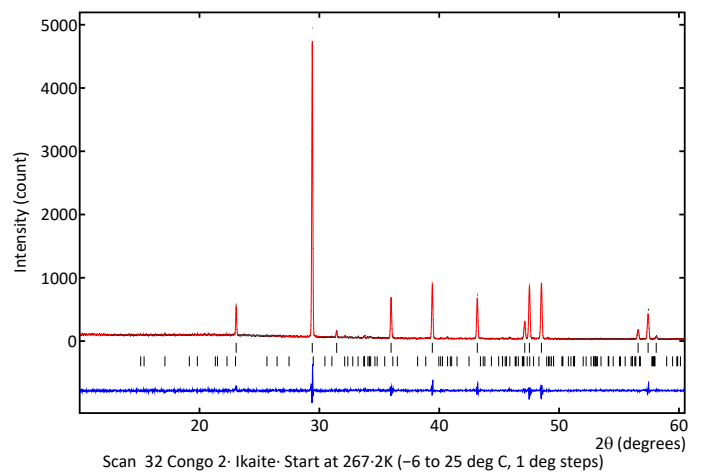
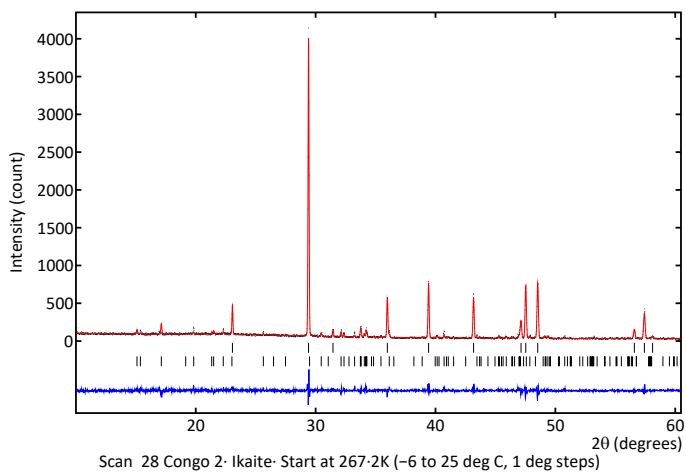
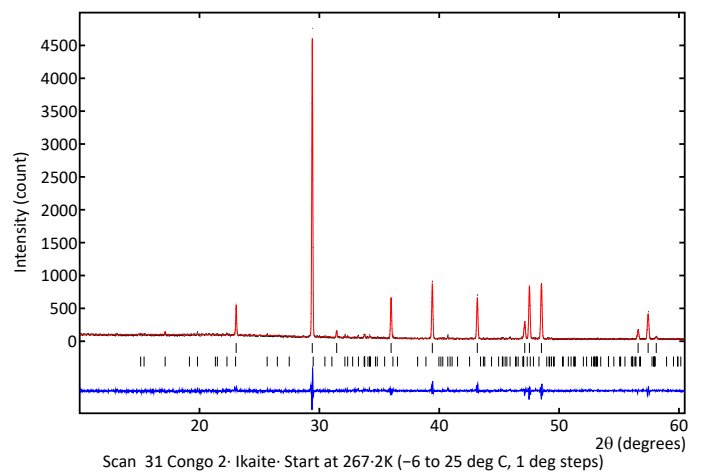
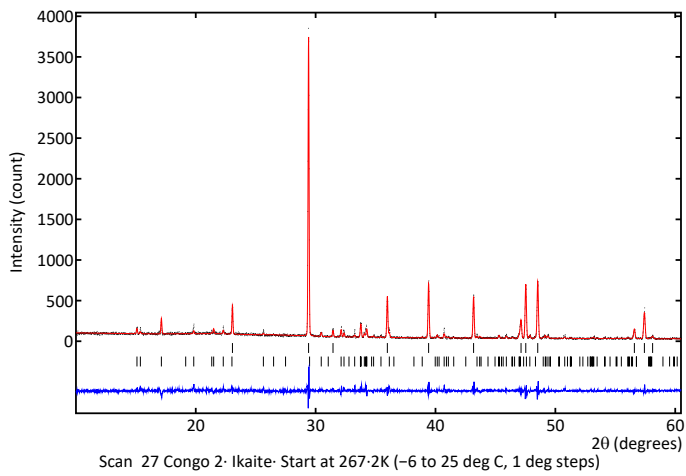
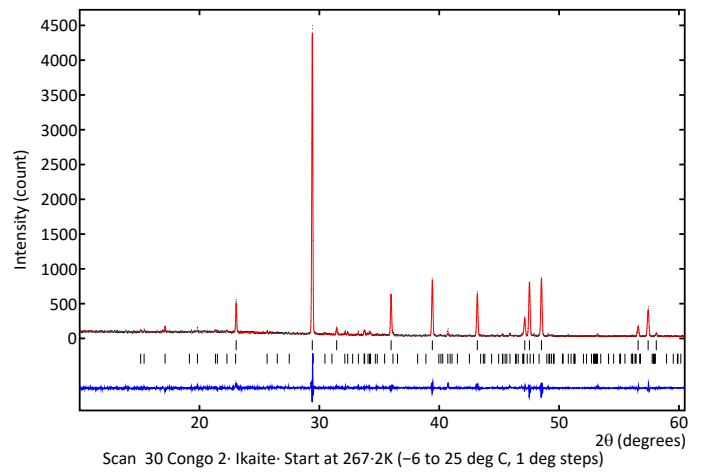
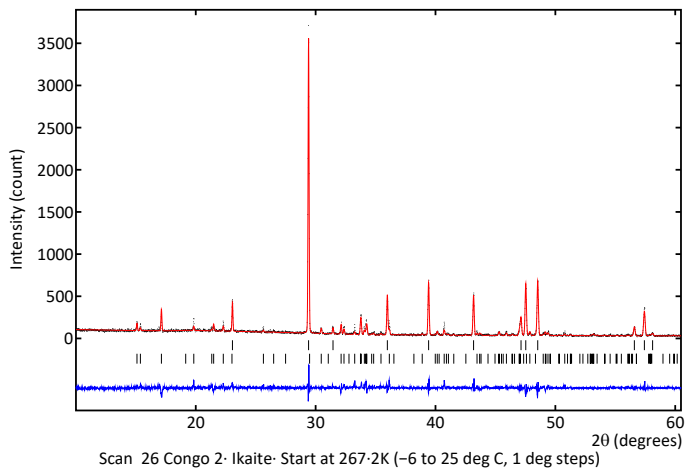
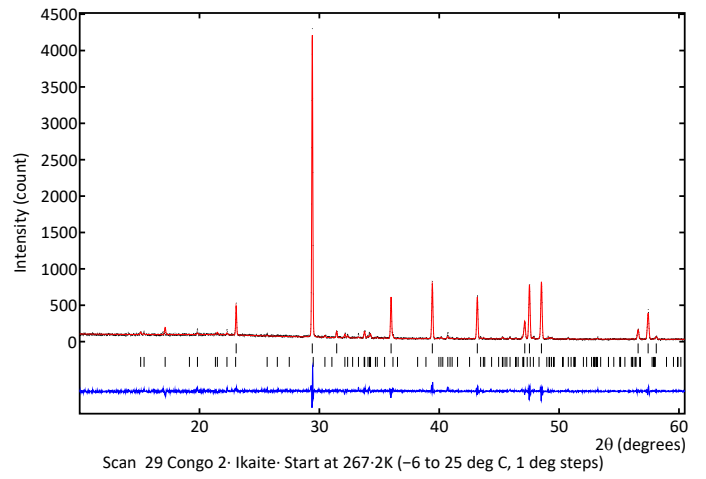
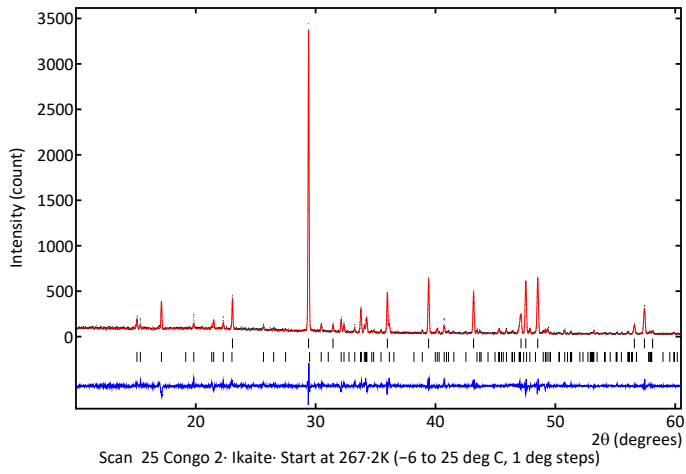


Congo Fan 2

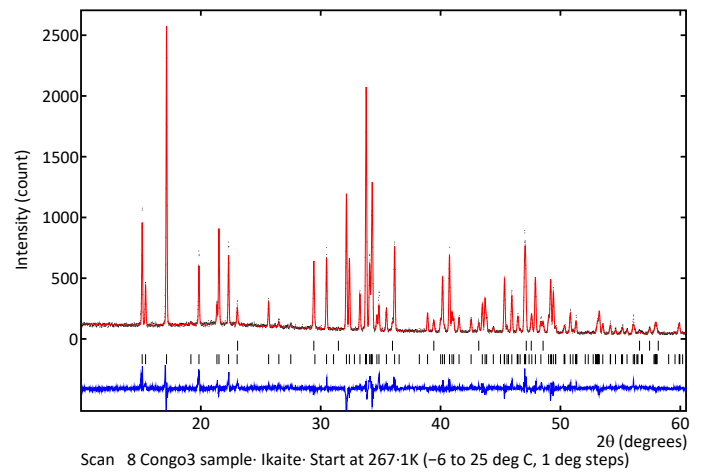
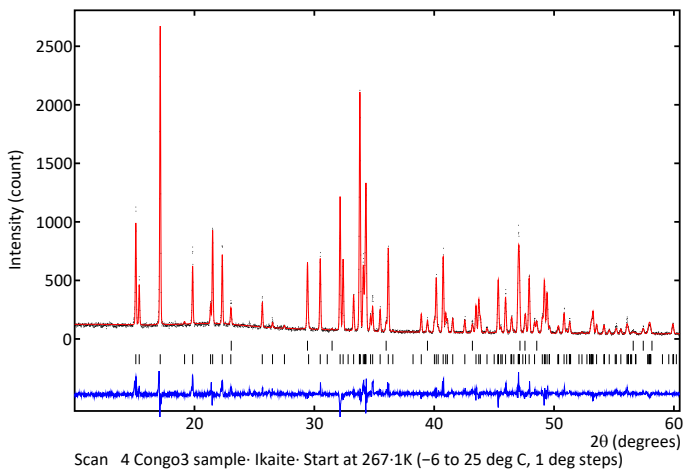
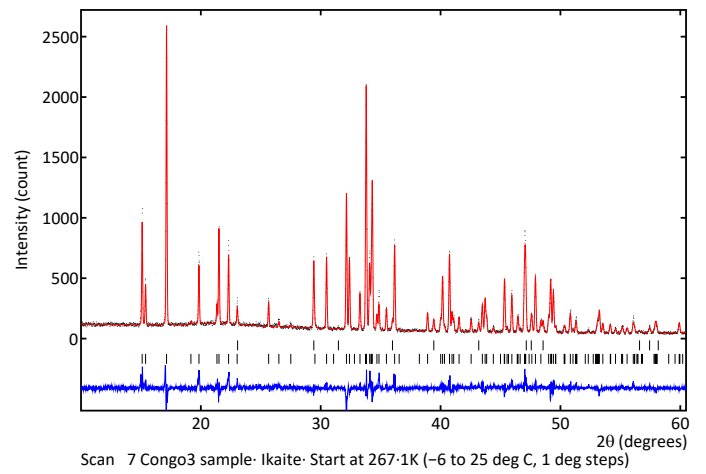
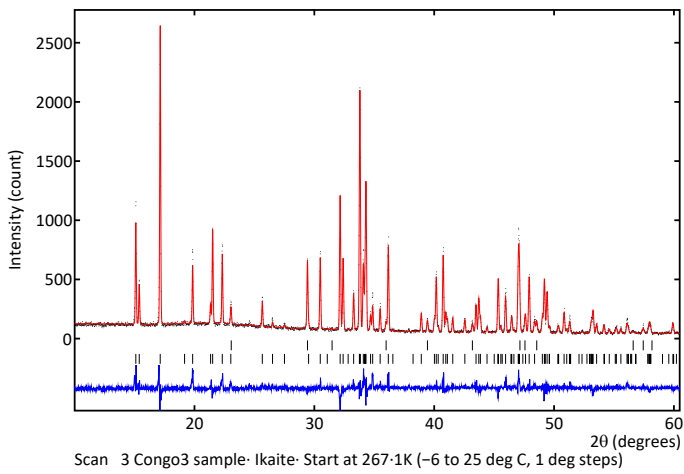
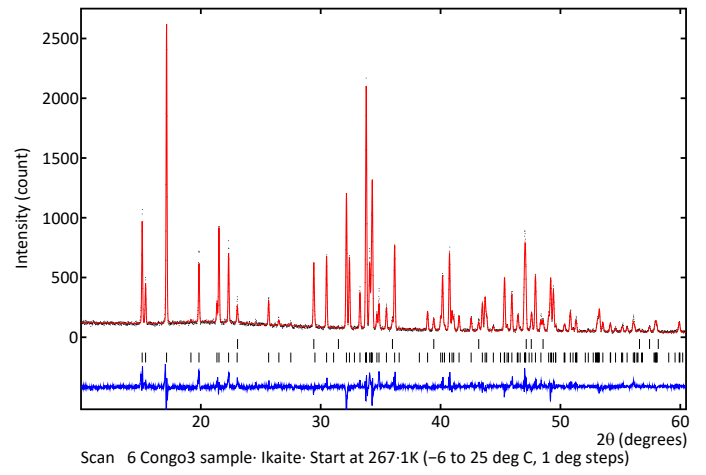
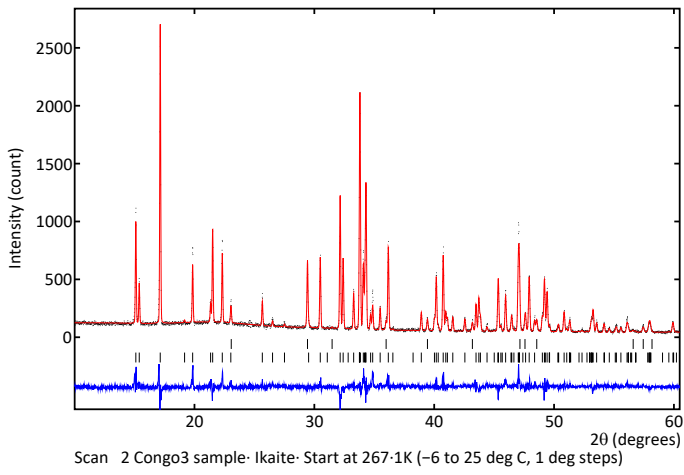
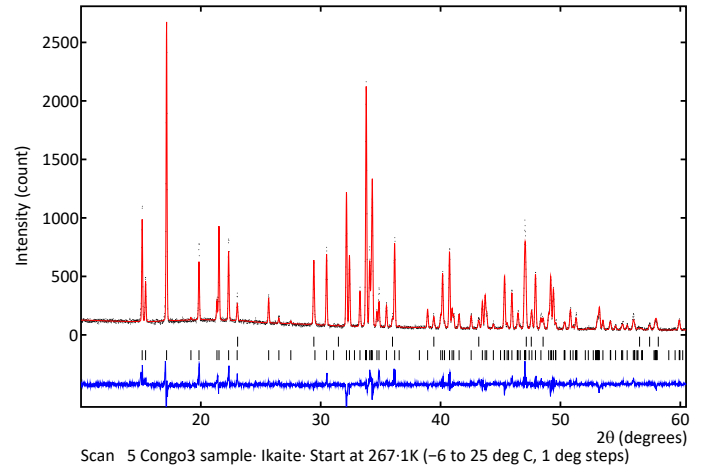
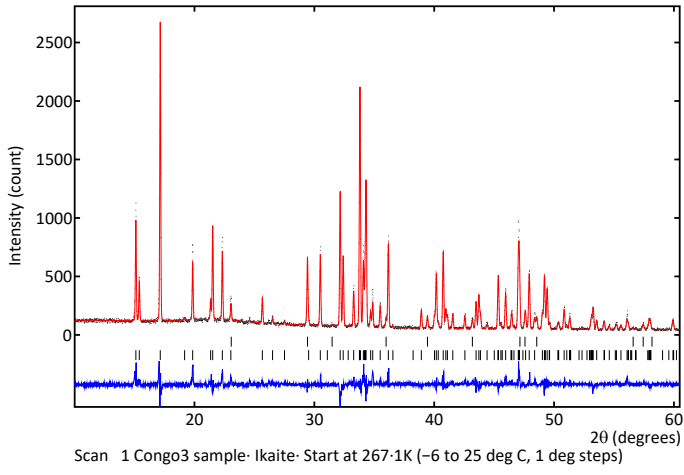


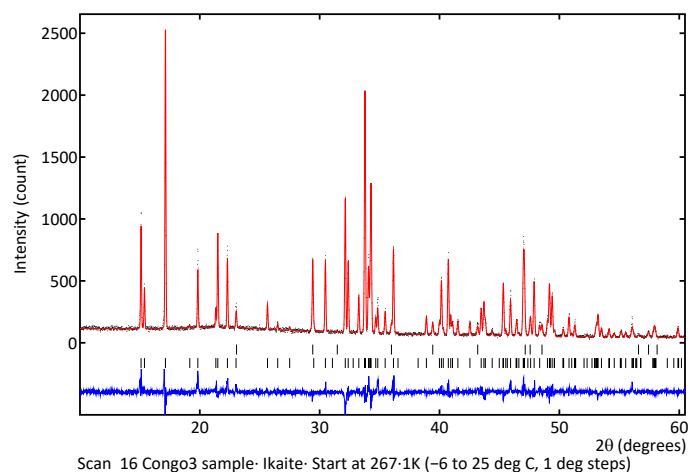
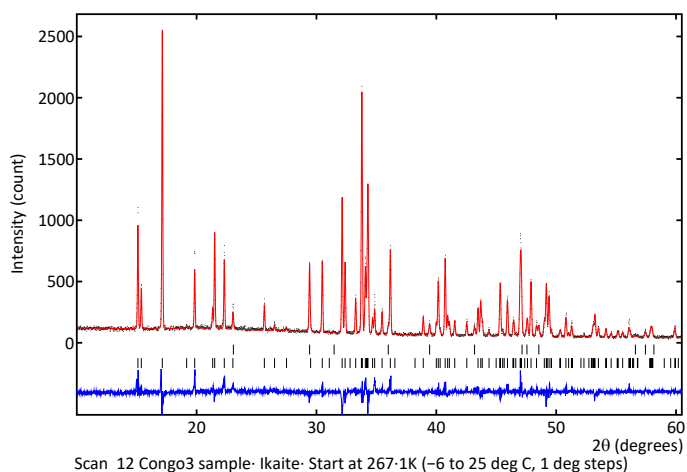
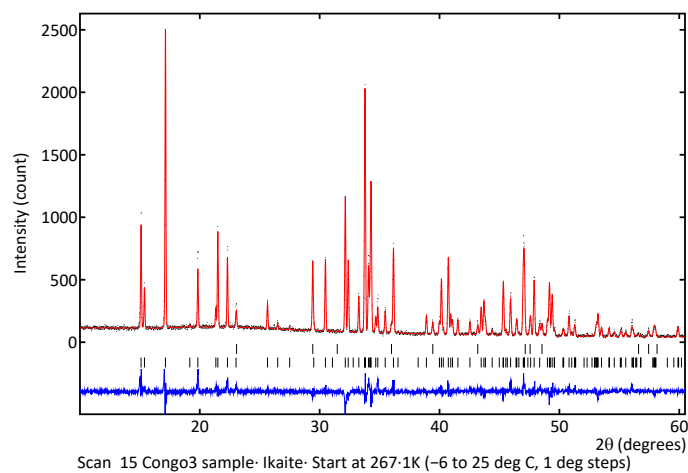
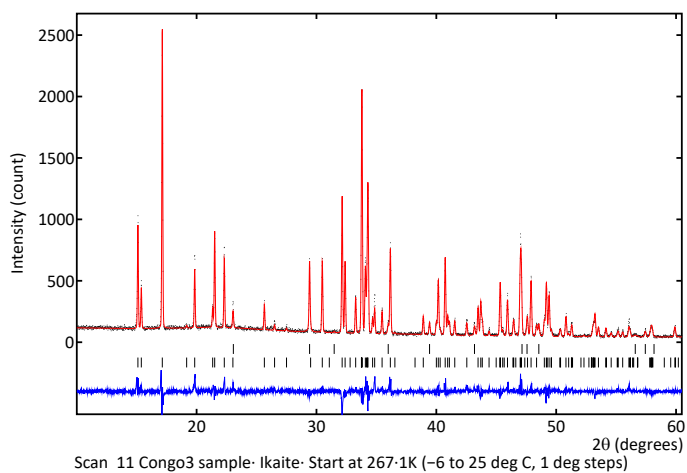
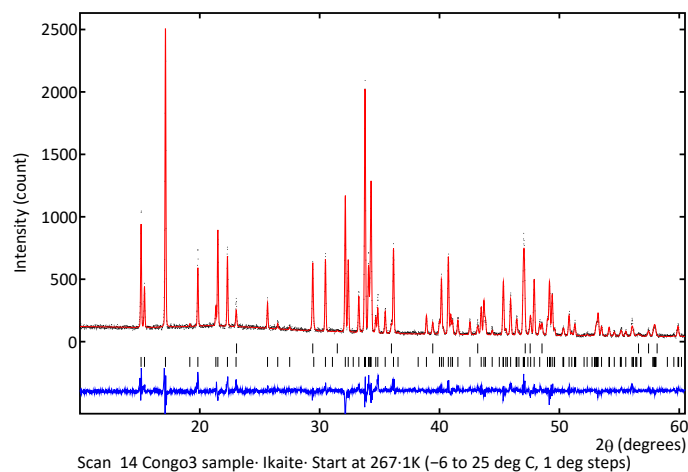
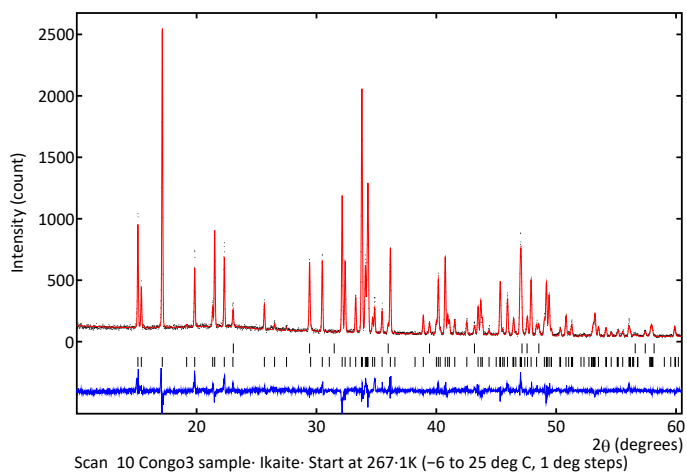
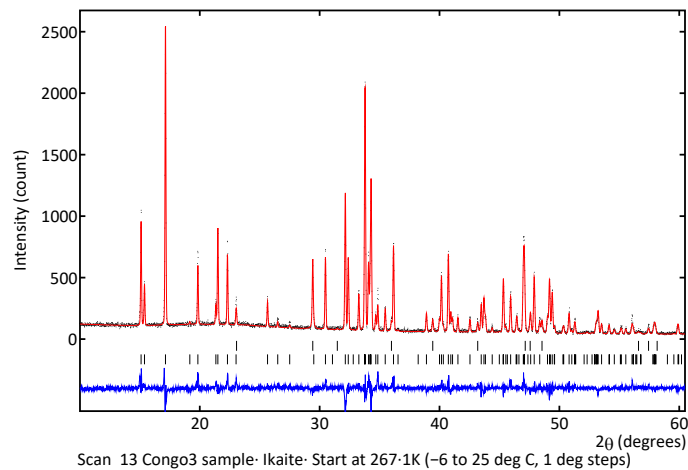
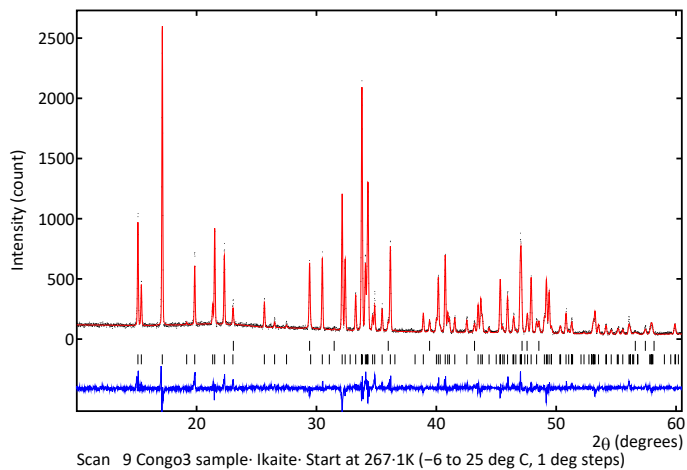


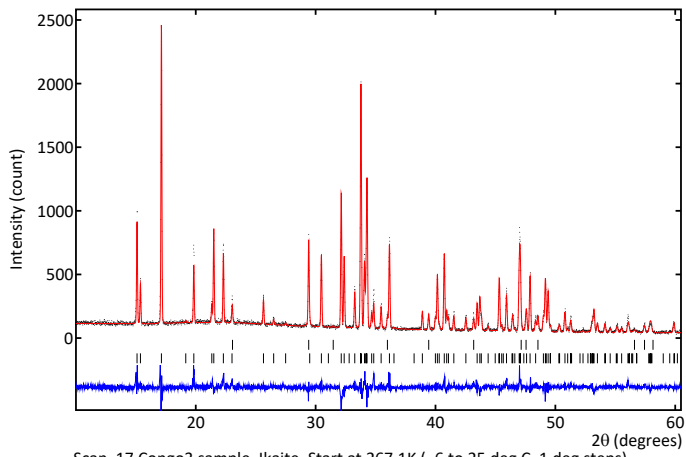




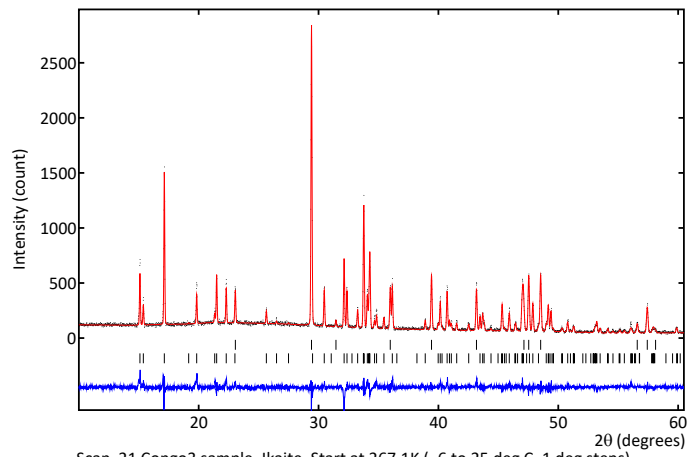
Congo Fan 3



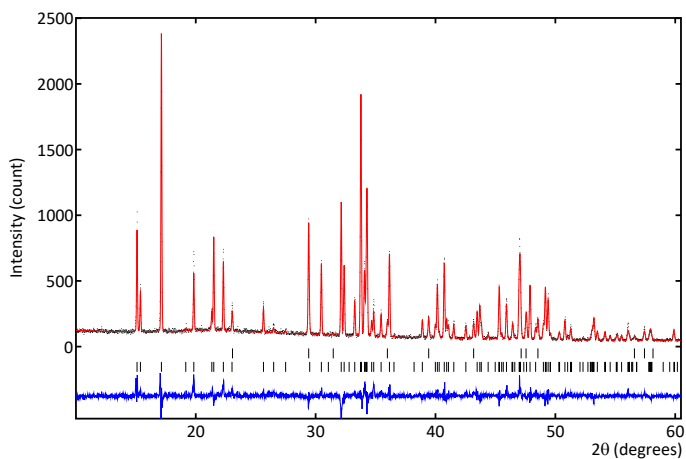




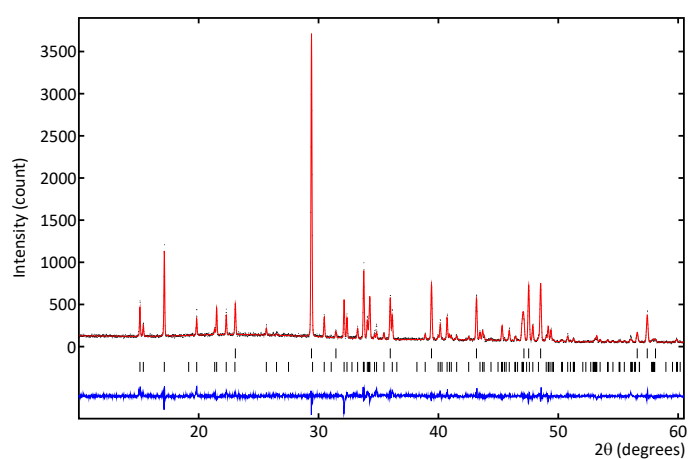
Scan 17 Congo3 sample- Ikaite- Start at 267.1K (-6 to 25 deg C, 1 deg steps)



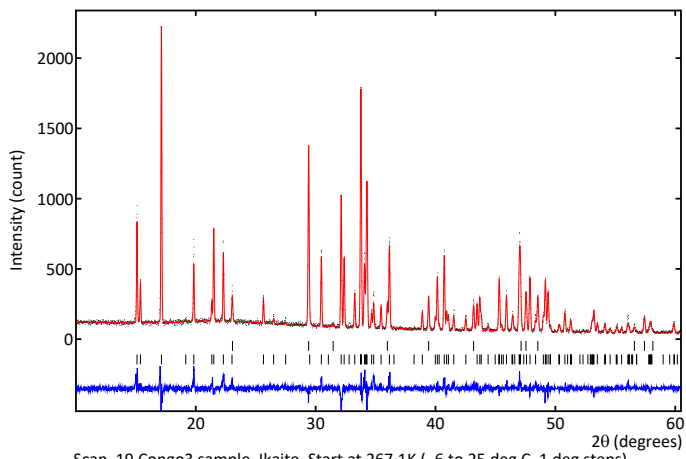
Scan 21 Congo3 sample- Ikaite- Start at 267.1K (-6 to 25 deg C, 1 deg steps)



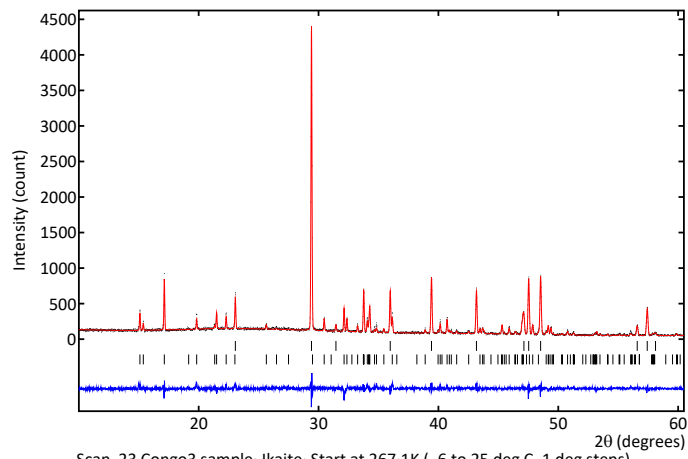
Scan 18 Congo3 sample- Ikaite- Start at 267.1K (-6 to 25 deg C, 1 deg steps)



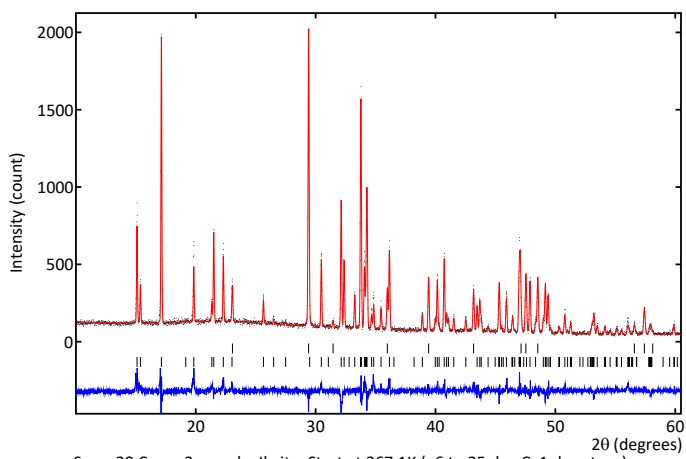
Scan 22 Congo3 sample- Ikaite- Start at 267.1K (-6 to 25 deg C, 1 deg steps)



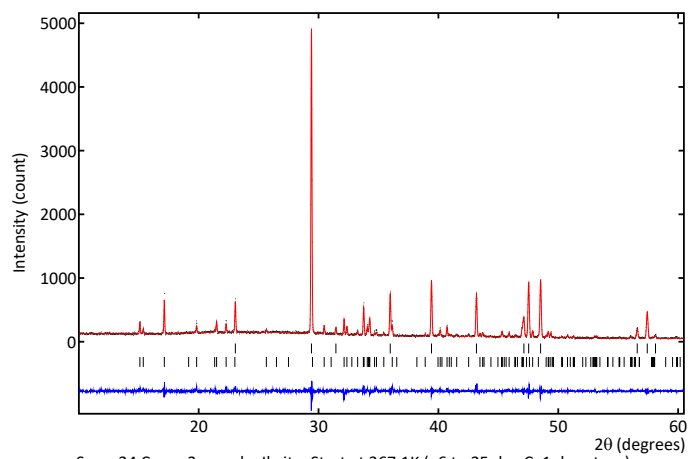
Scan 19 Congo3 sample- Ikaite- Start at 267.1K (-6 to 25 deg C, 1 deg steps)



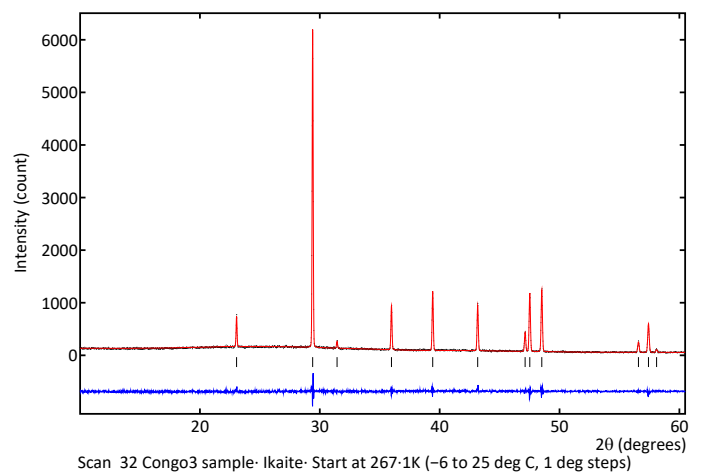
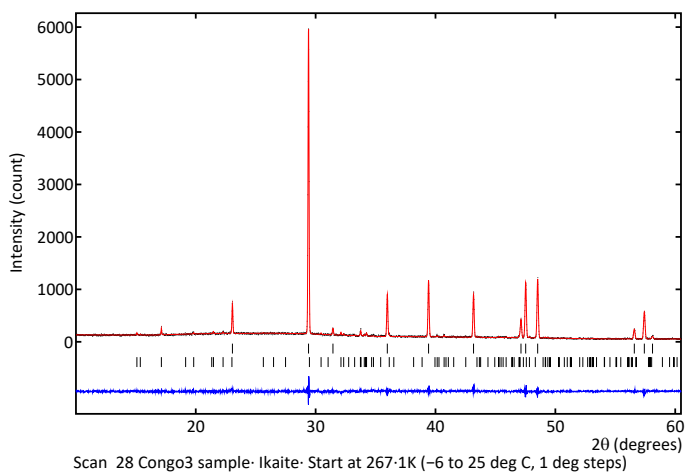
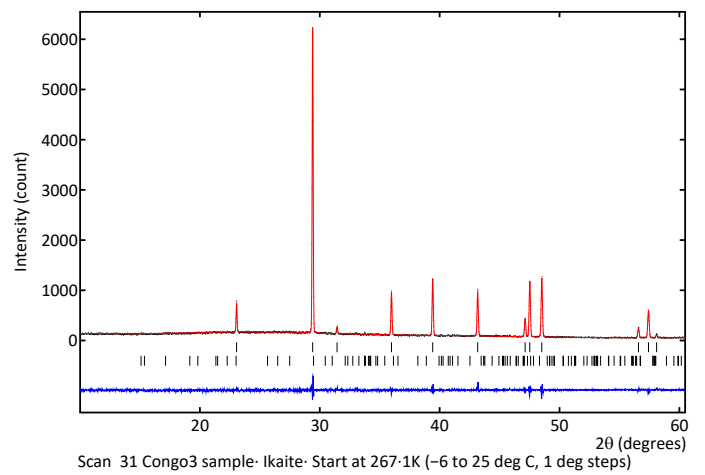
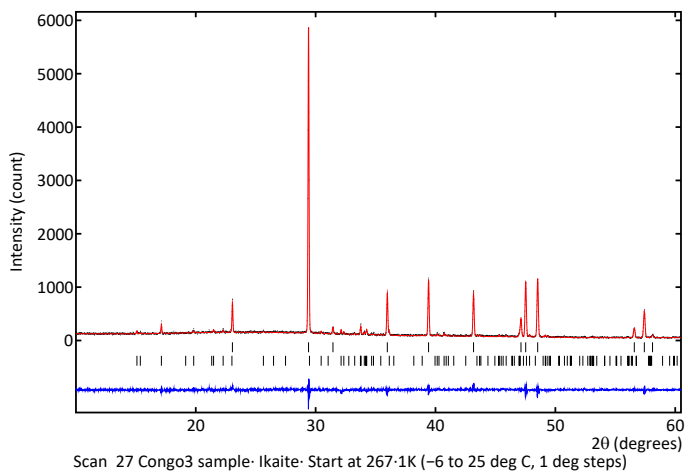
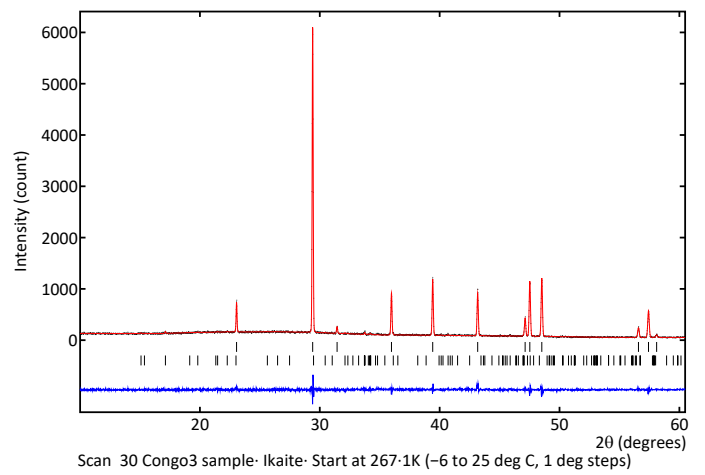
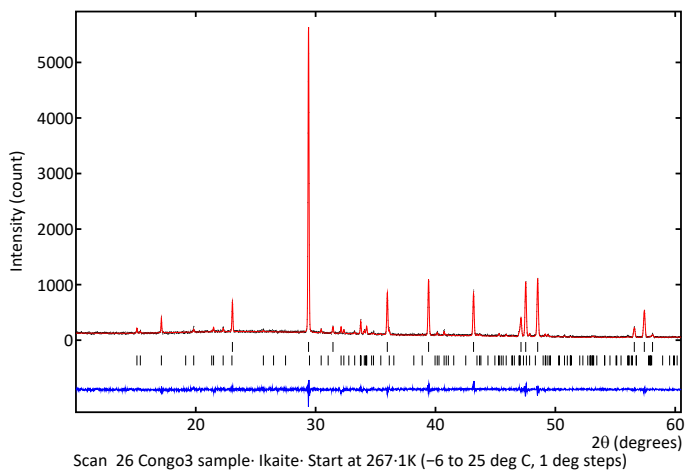
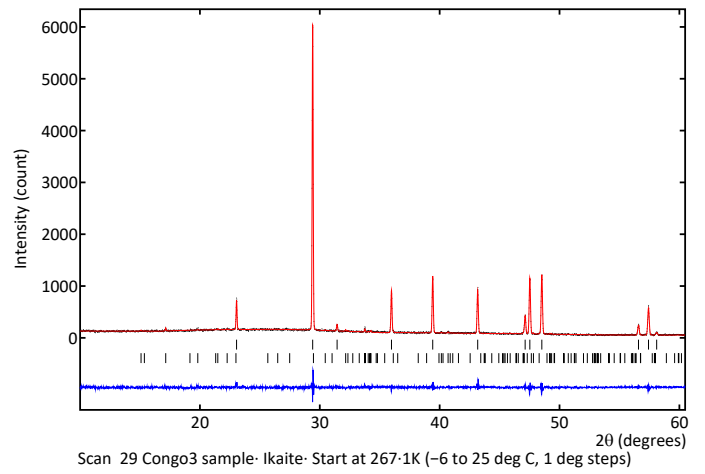
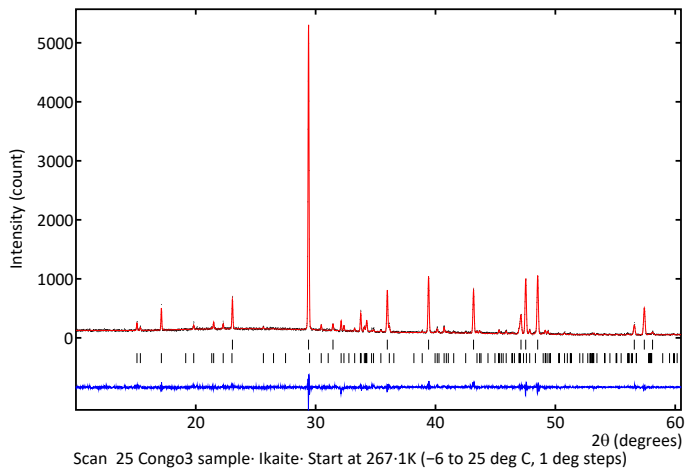
Scan 23 Congo3 sample- Ikaite- Start at 267.1K (-6 to 25 deg C, 1 deg steps)



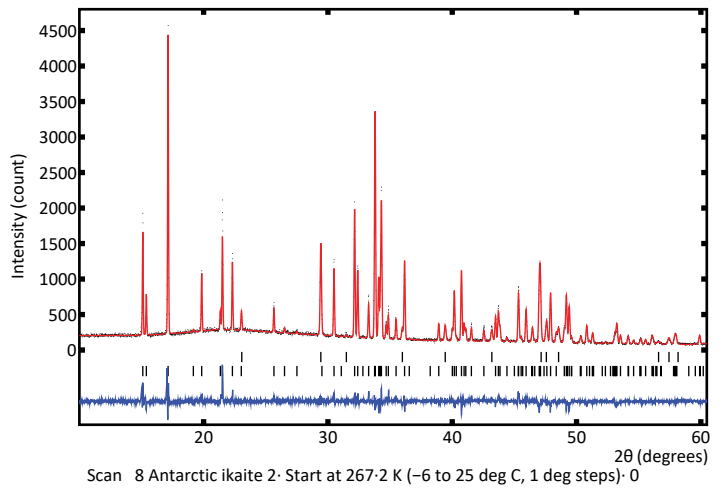
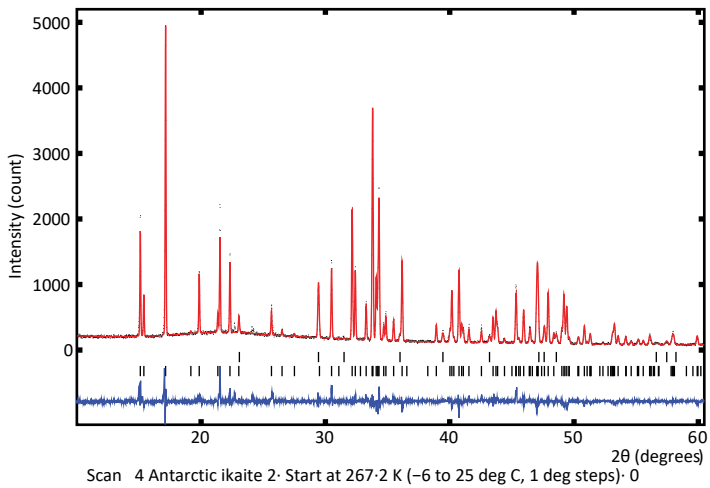
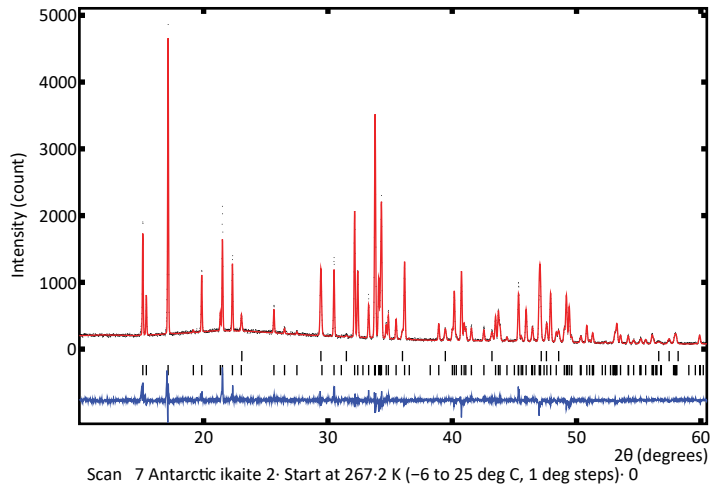
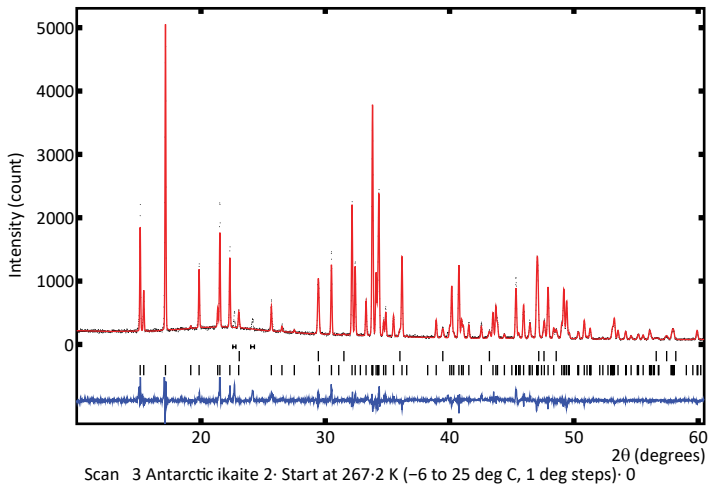
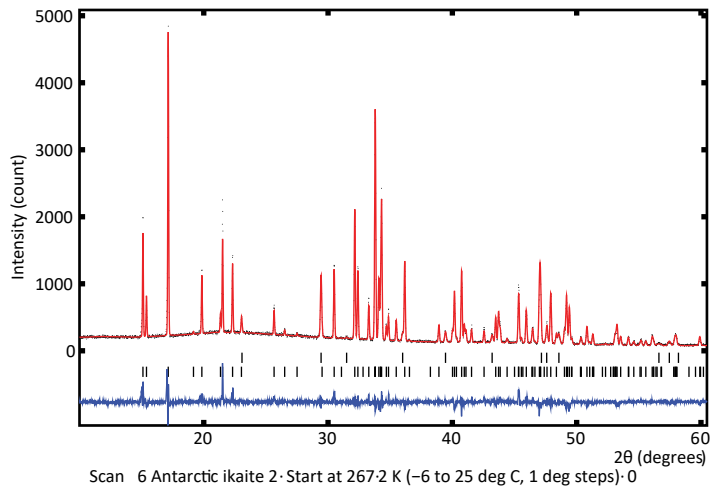
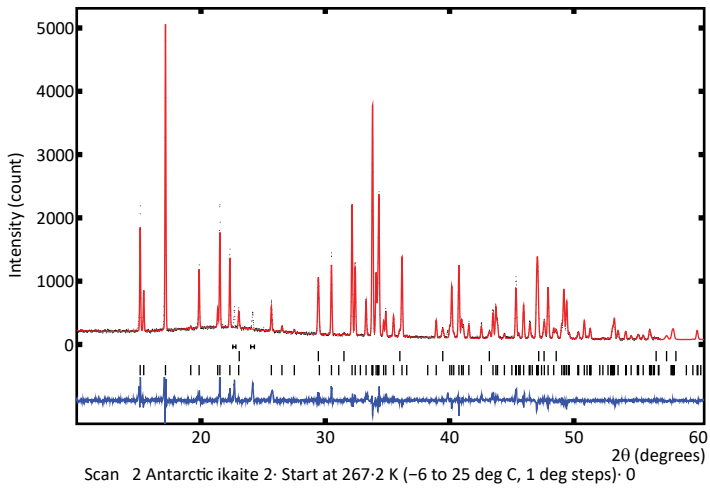
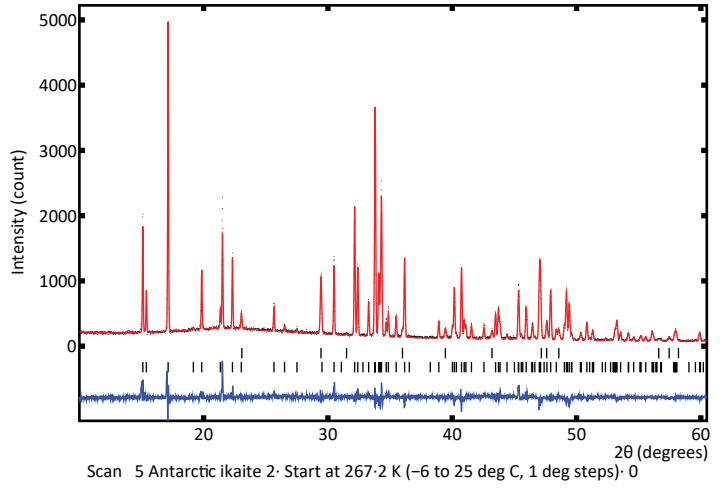
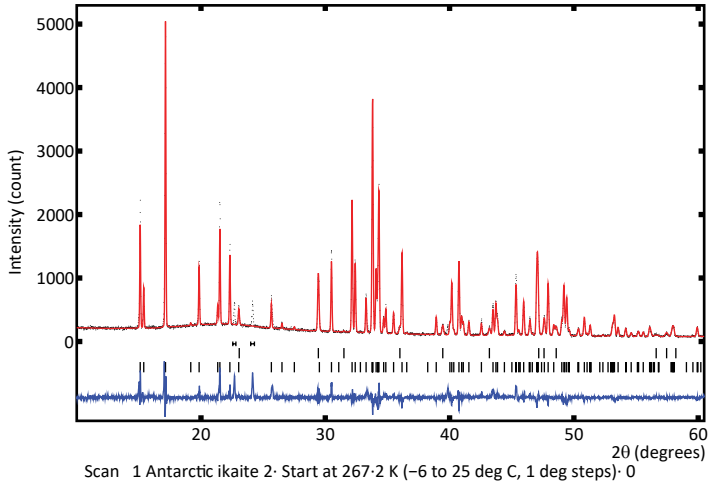
Scan 20 Congo3 sample- Ikaite- Start at 267.1K (-6 to 25 deg C, 1 deg steps)

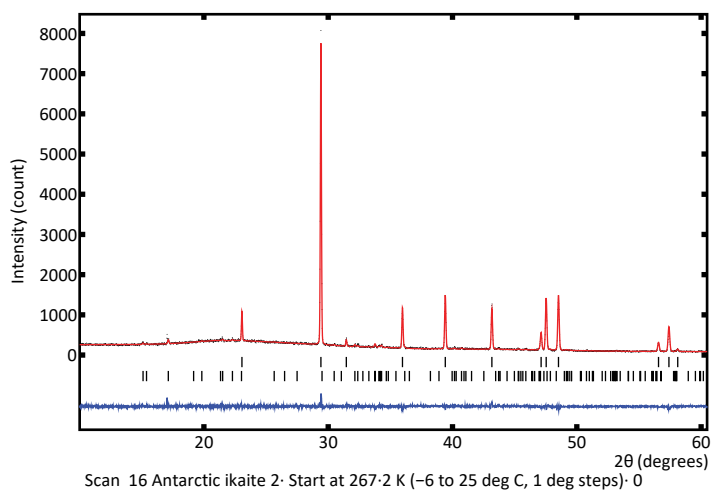
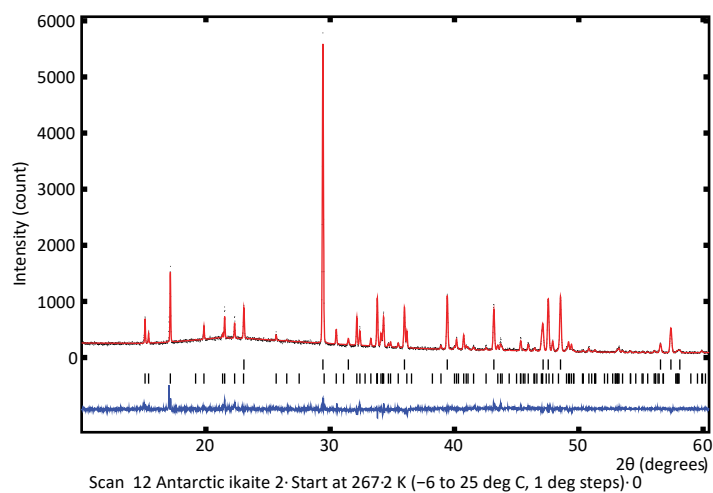
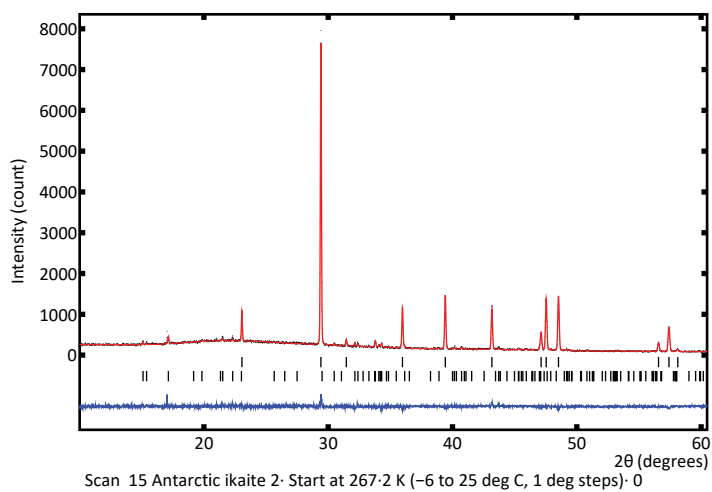
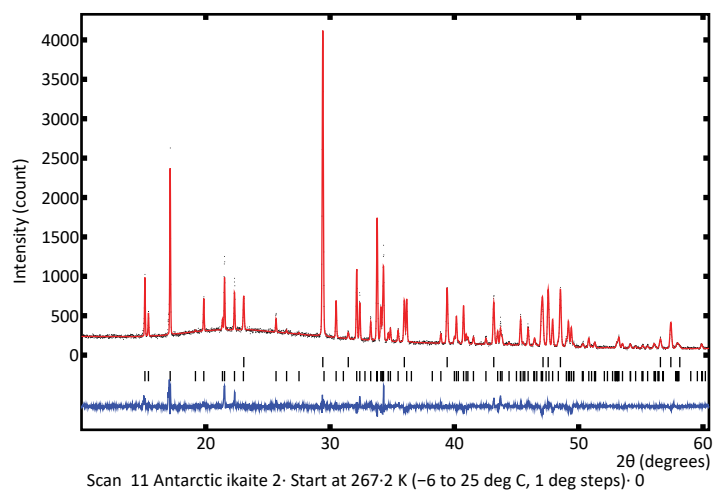
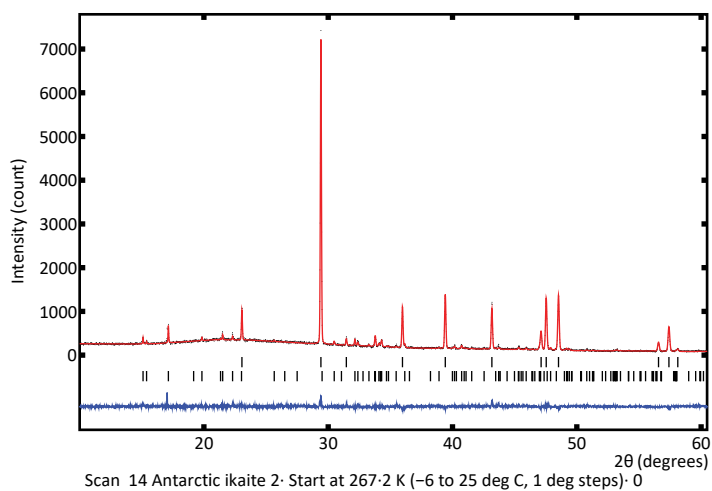
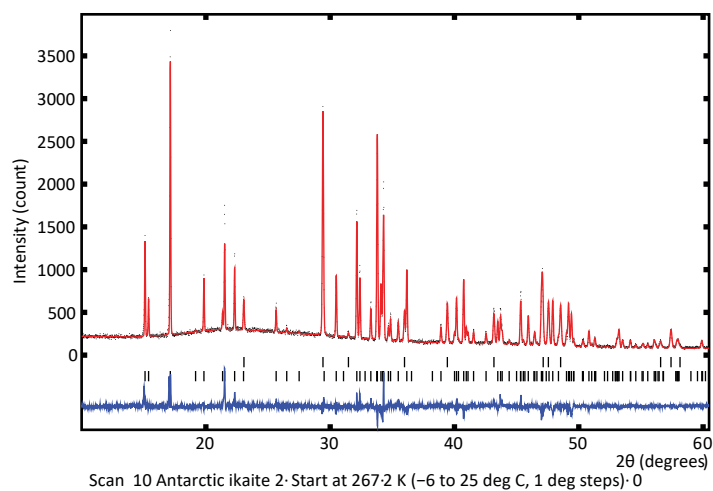
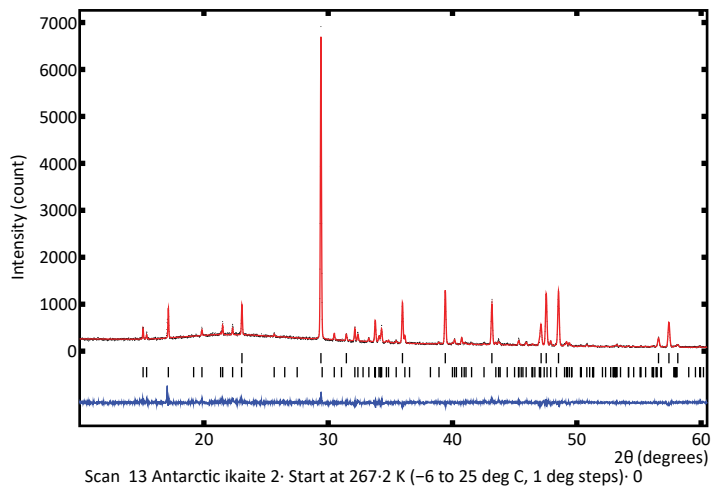
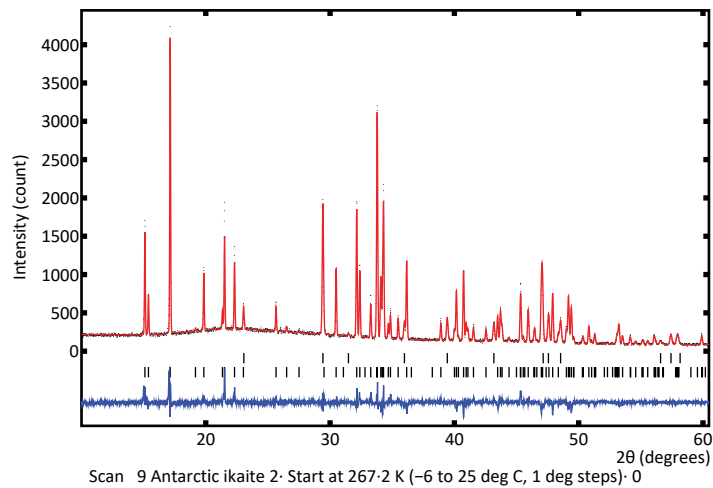


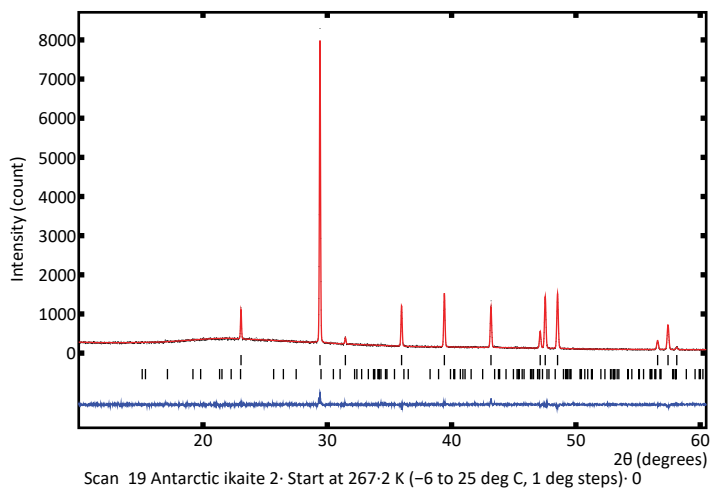
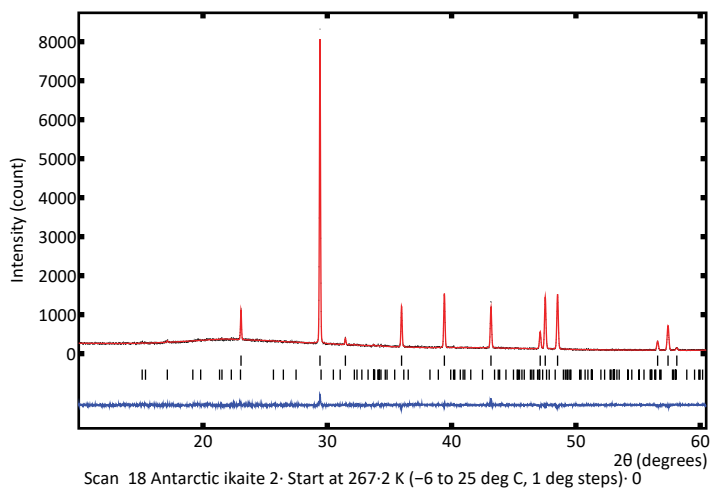
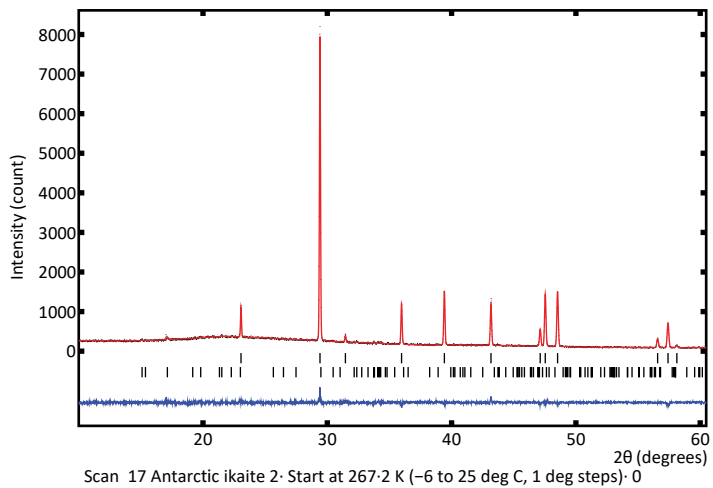
Scan 24 Congo3 sample- Ikaite- Start at 267.1K (-6 to 25 deg C, 1 deg steps)



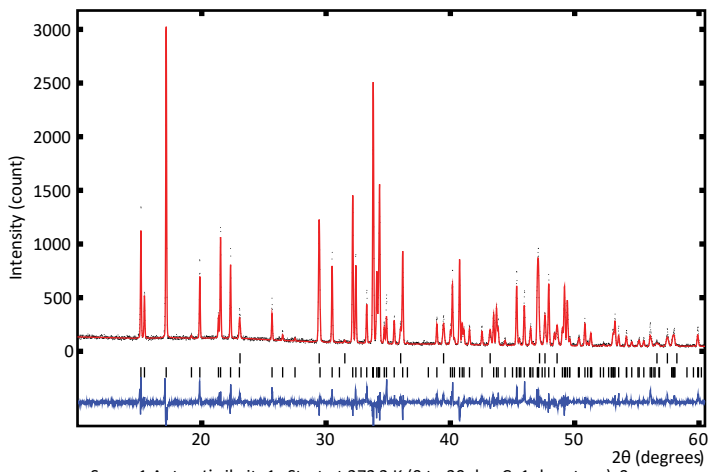
Bransfield Strait 1



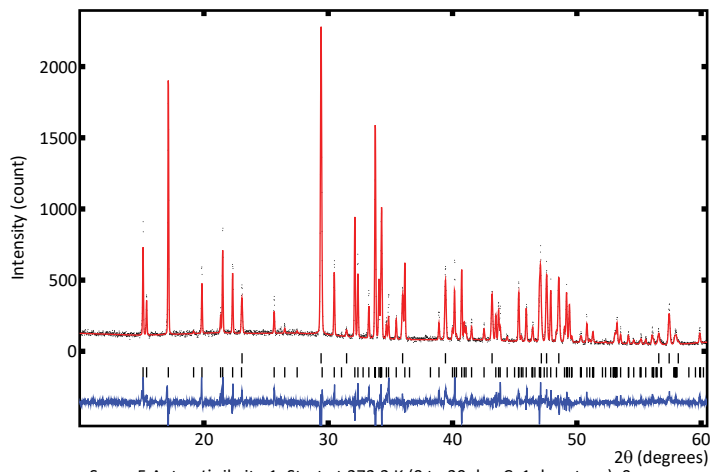




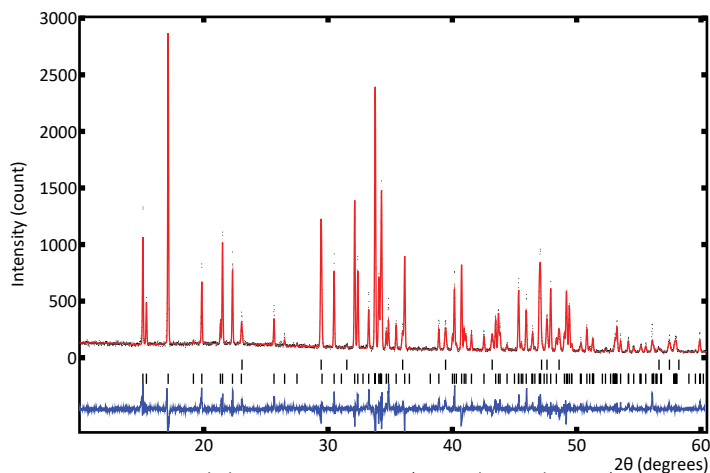
Bransfield Strait 2



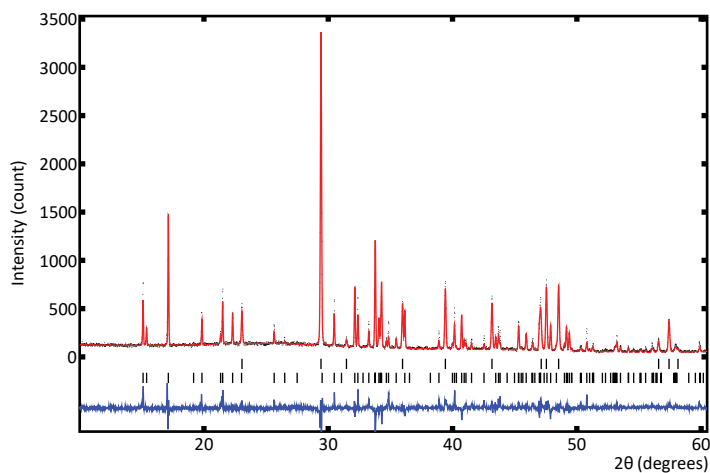
Scan 1 Antarctic ikaite1 · Start at 273.2 K (0 to 30 deg C, 1 deg steps) · 0



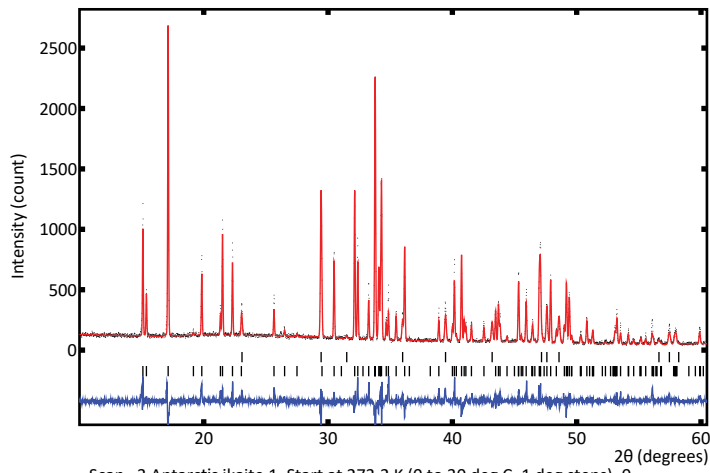
Scan 5 Antarctic ikaite1 · Start at 273.2 K (0 to 30 deg C, 1 deg steps) · 0



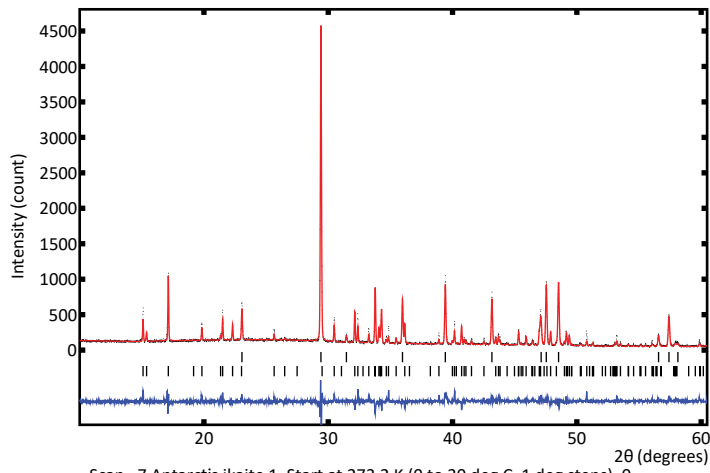
Scan 2 Antarctic ikaite1 · Start at 273.2 K (0 to 30 deg C, 1 deg steps) · 0



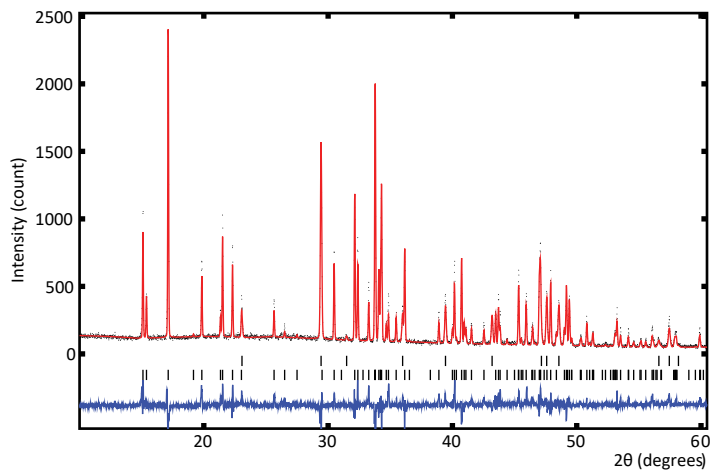
Scan 6 Antarctic ikaite1 · Start at 273.2 K (0 to 30 deg C, 1 deg steps) · 0



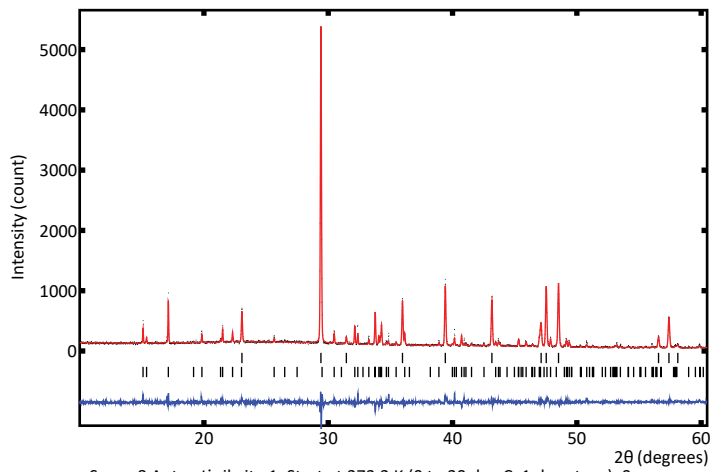
Scan 3 Antarctic ikaite1 · Start at 273.2 K (0 to 30 deg C, 1 deg steps) · 0



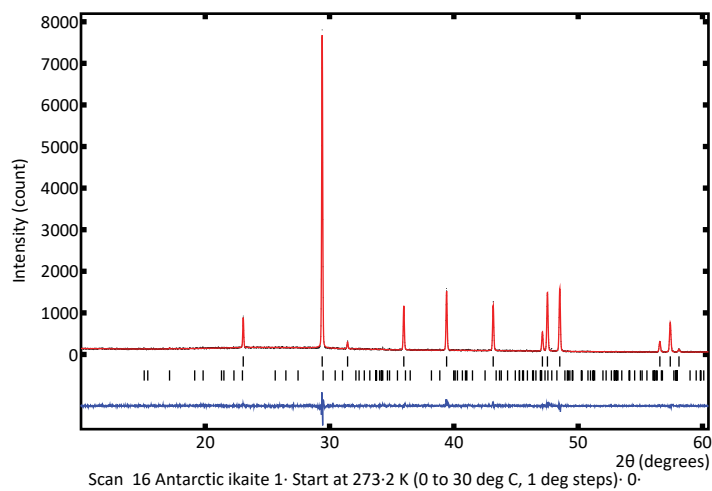
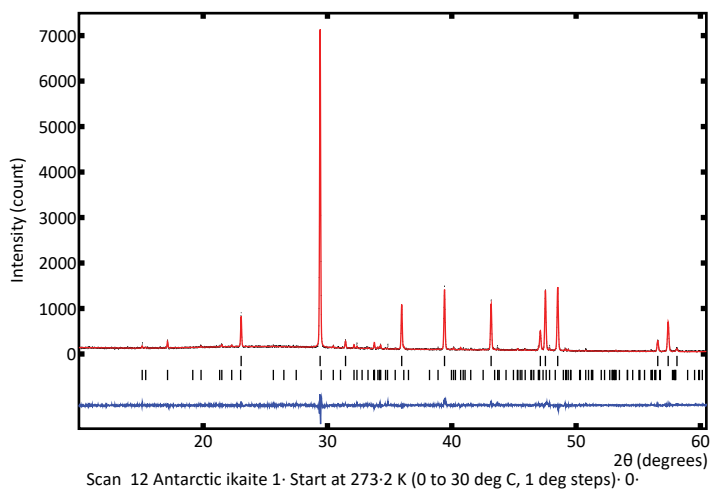
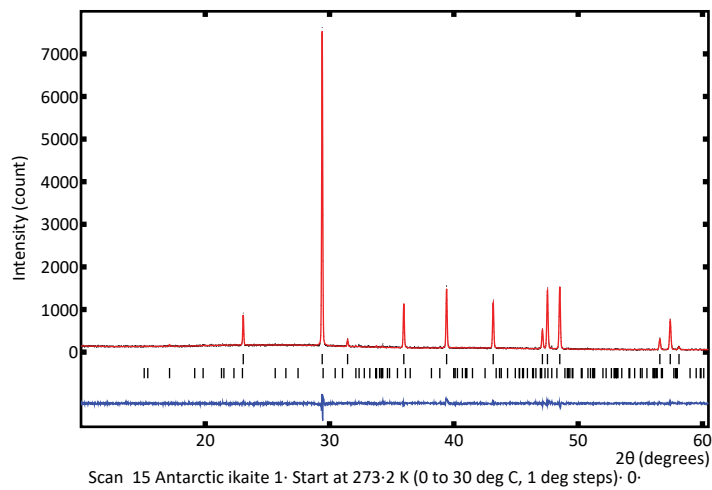
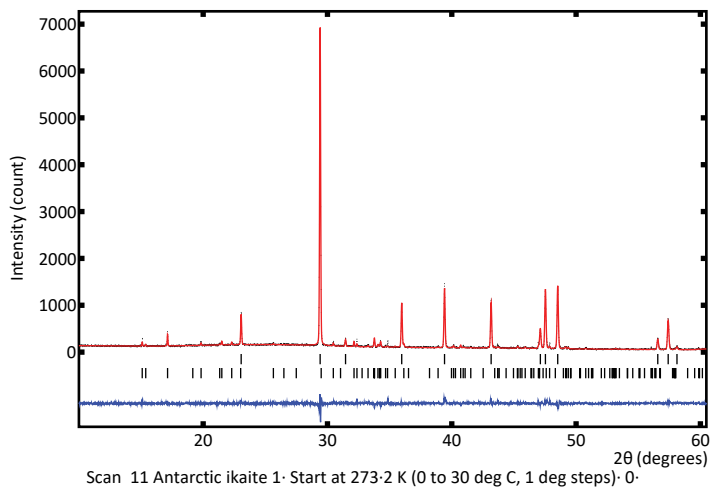
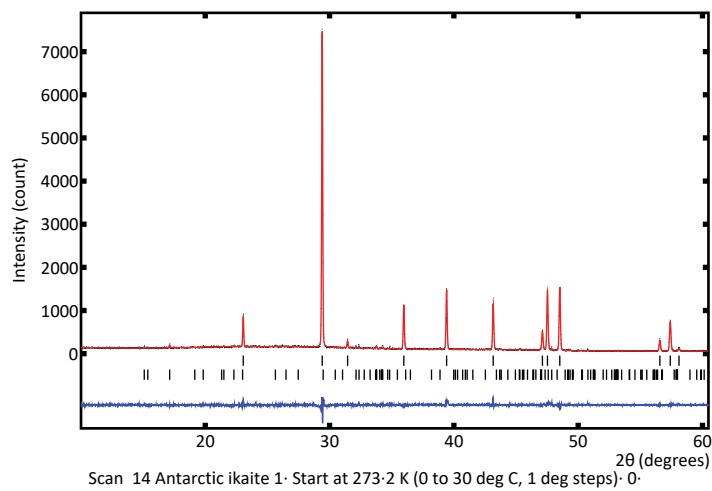
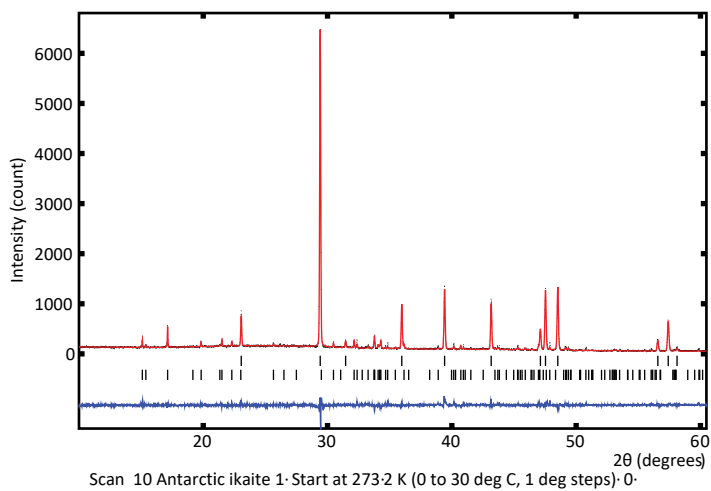
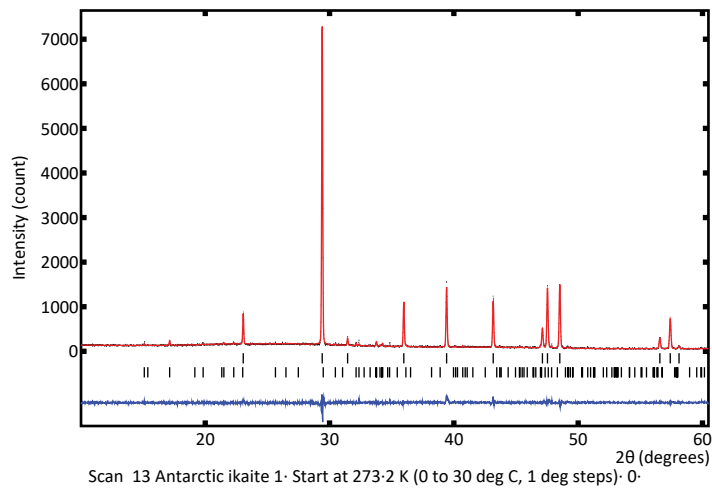
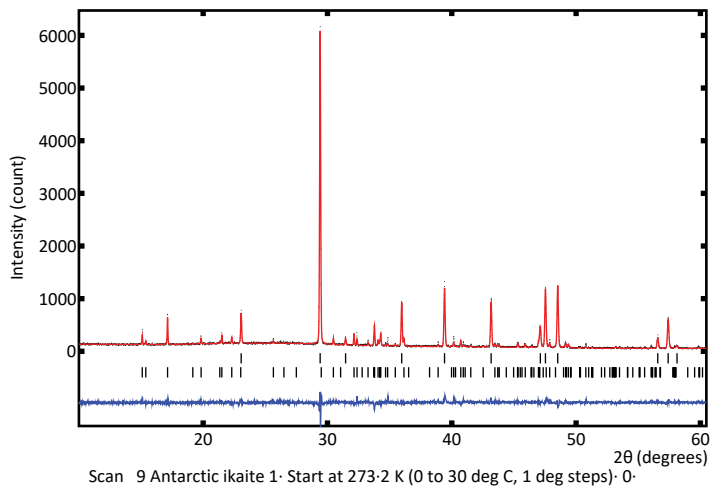
Scan 7 Antarctic ikaite1 · Start at 273.2 K (0 to 30 deg C, 1 deg steps) · 0

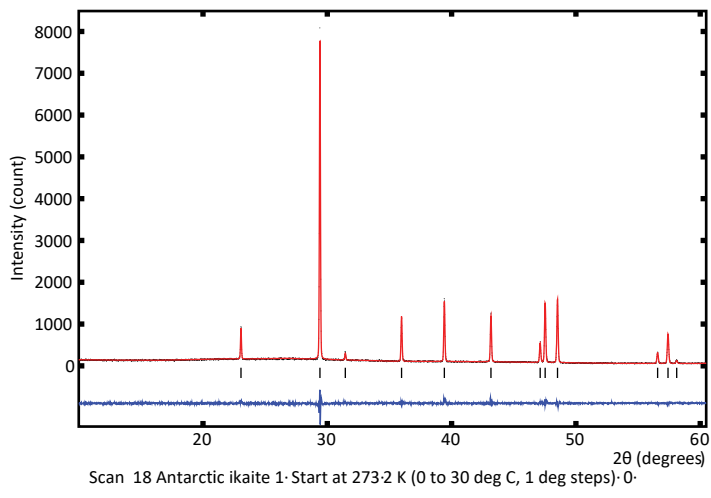
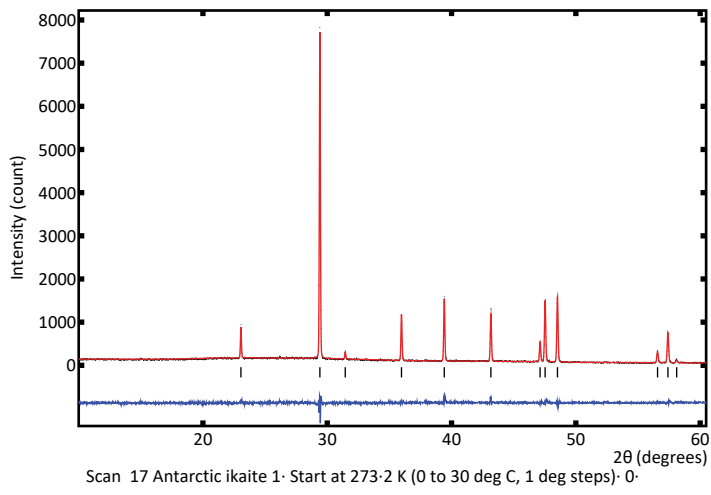


Scan 4 Antarctic ikaite1 · Start at 273.2 K (0 to 30 deg C, 1 deg steps) · 0

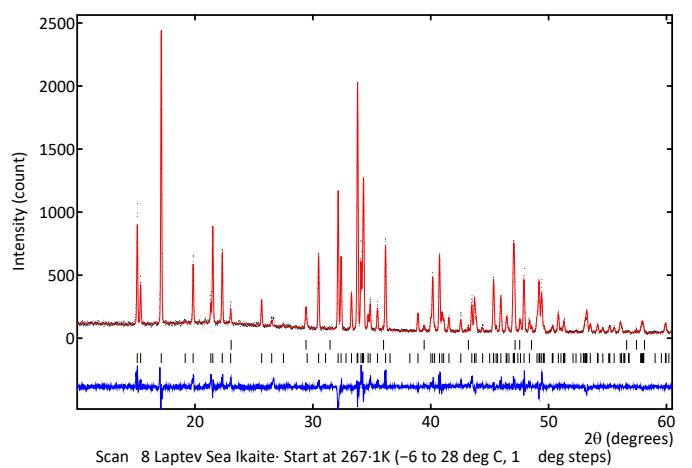
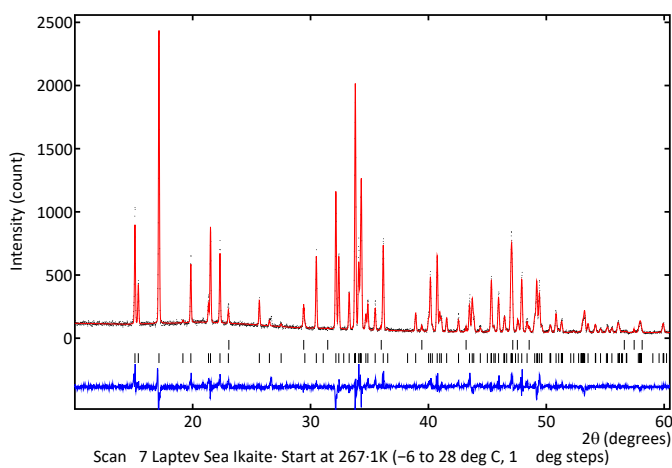
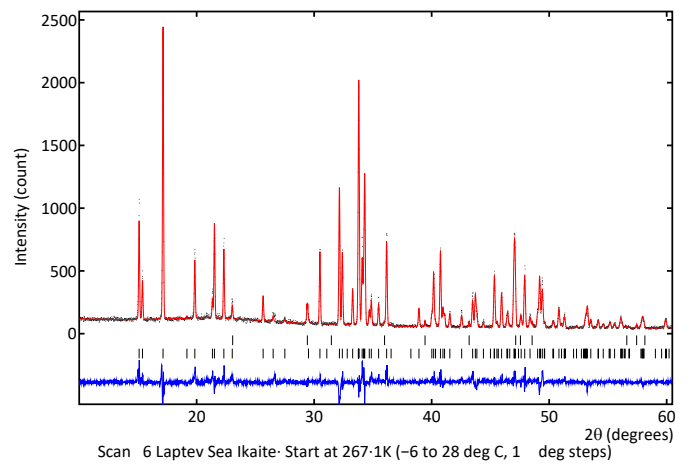
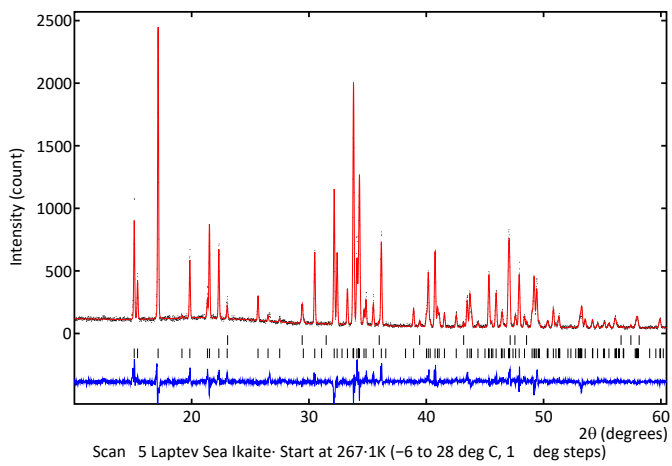
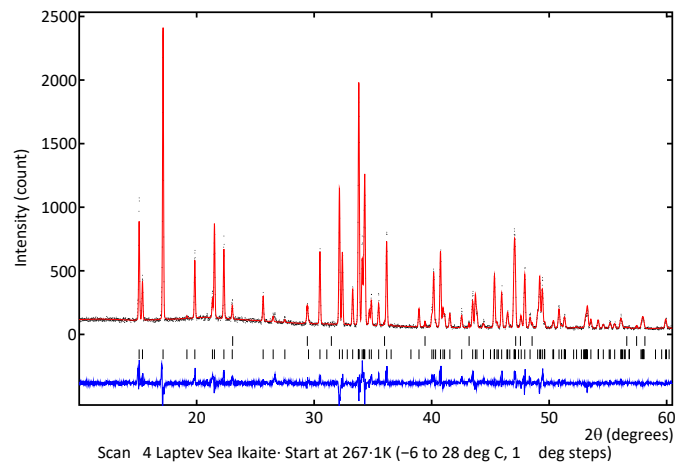
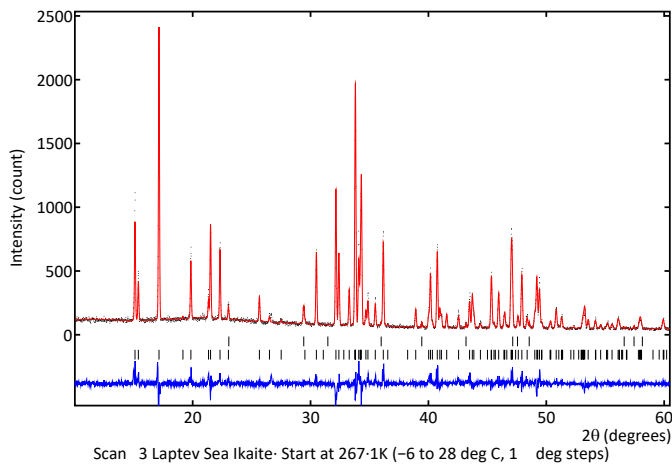
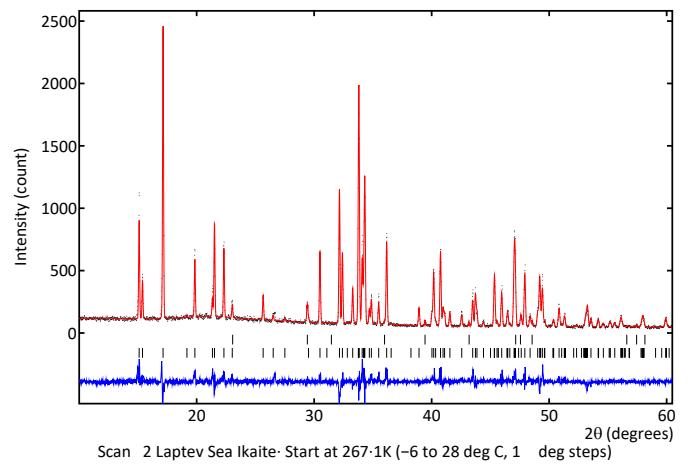
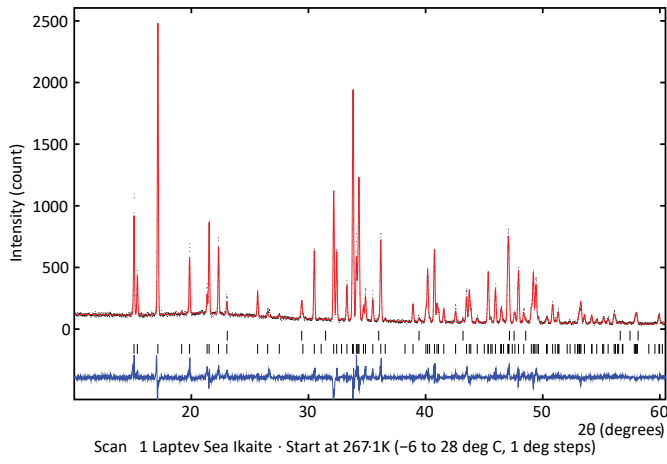


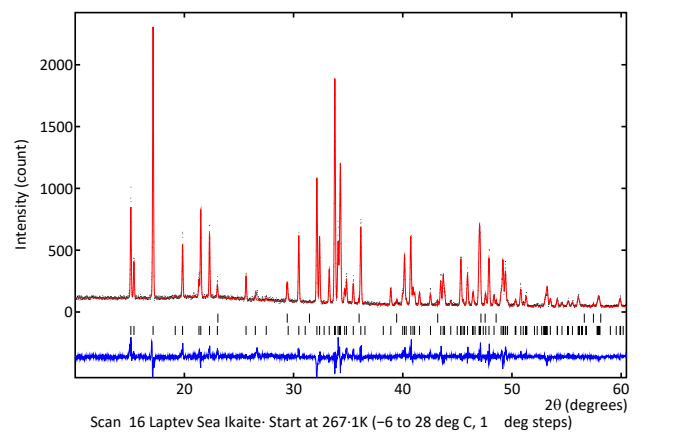
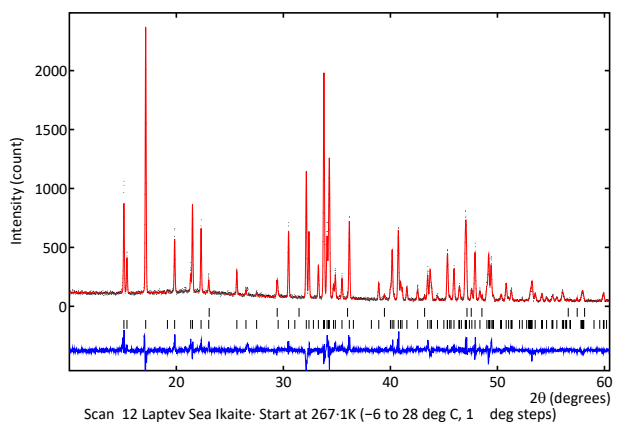
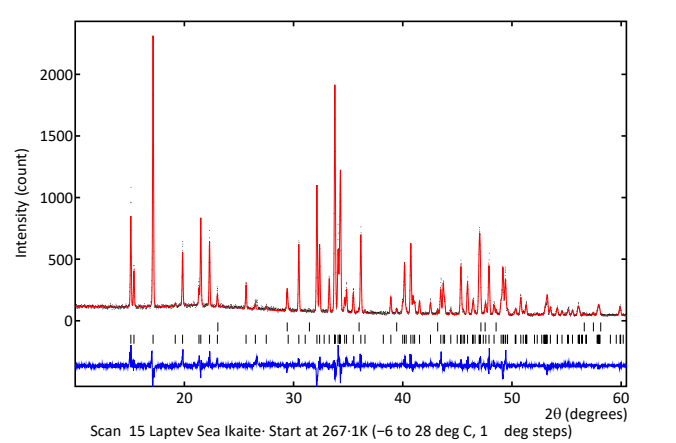
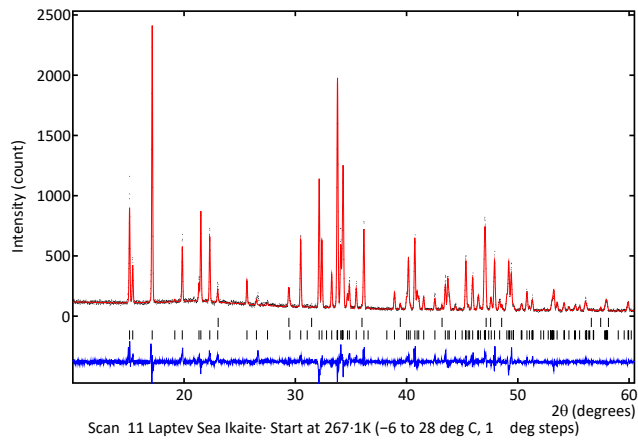
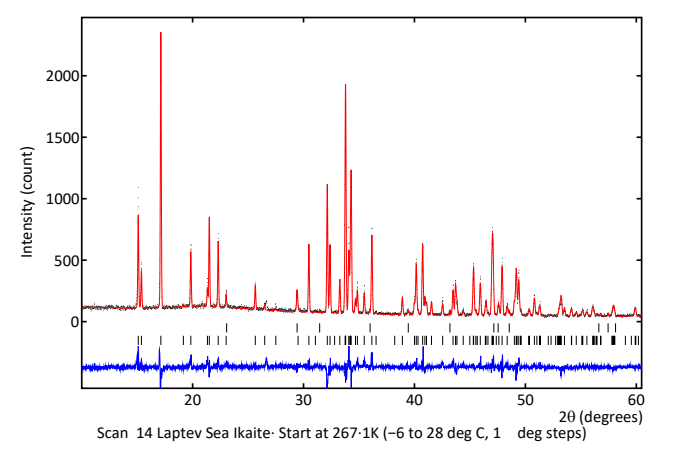
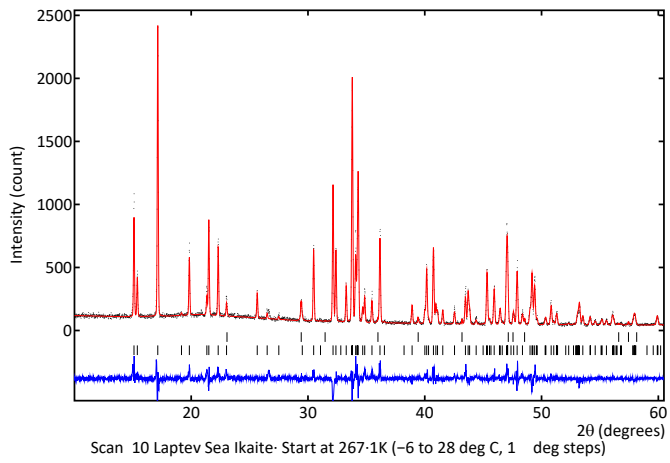
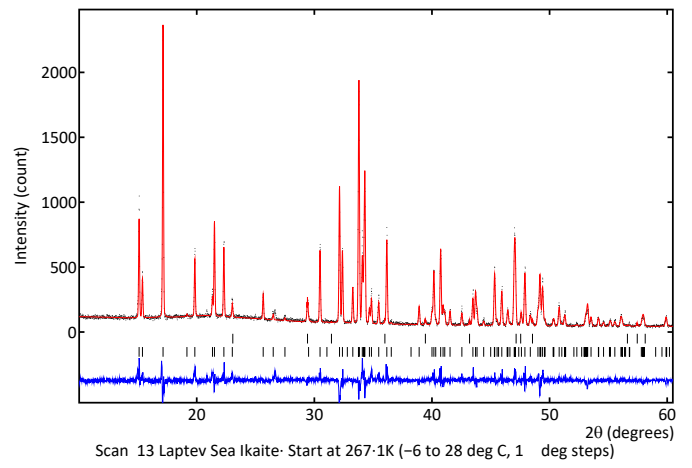
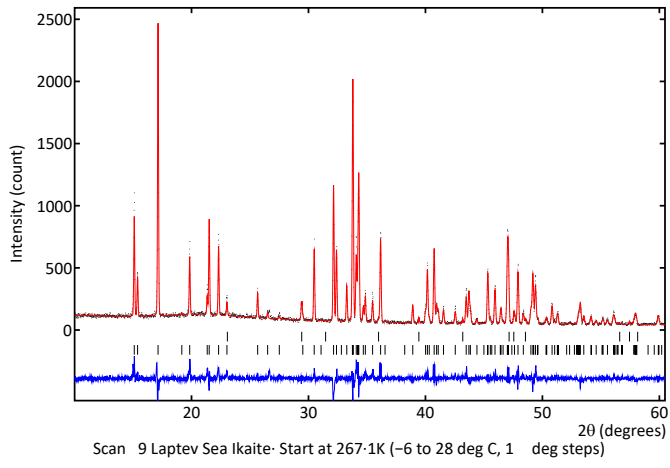
Scan 8 Antarctic ikaite1 · Start at 273.2 K (0 to 30 deg C, 1 deg steps) · 0

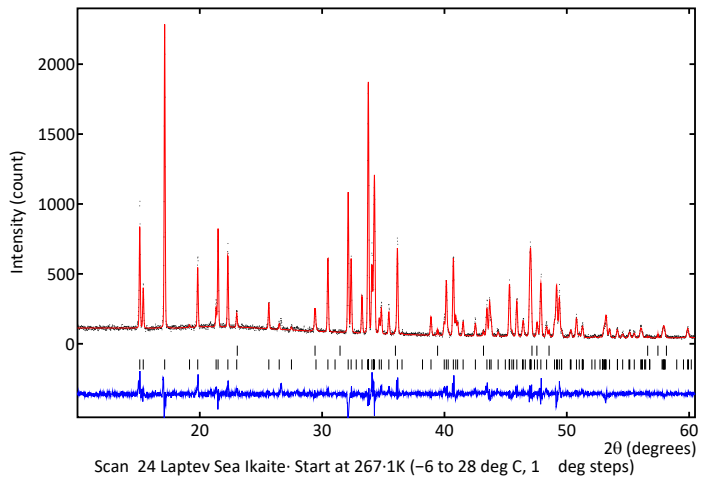
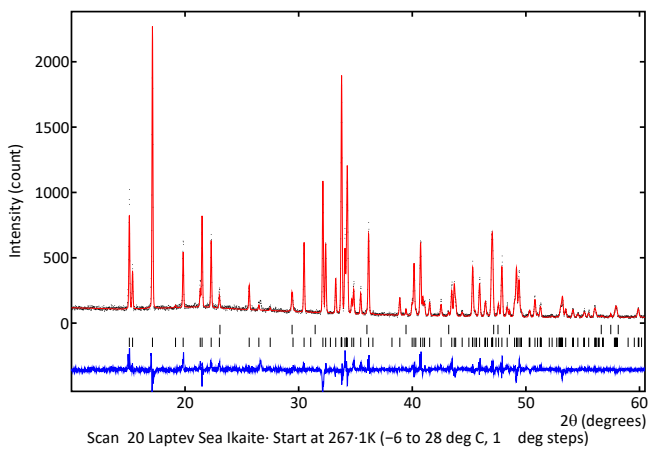
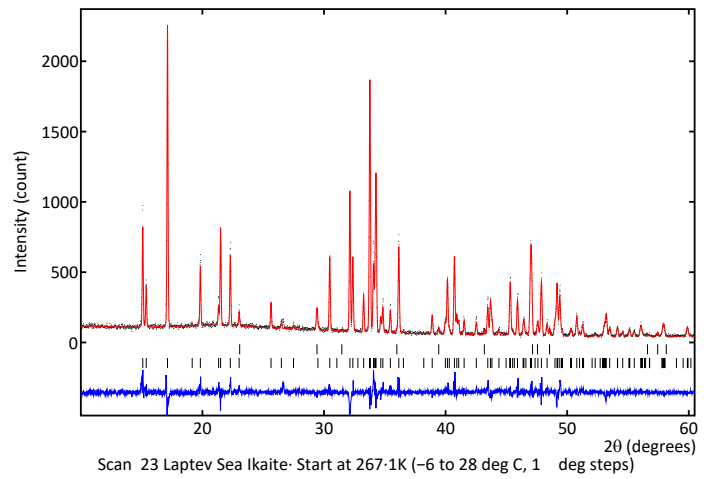
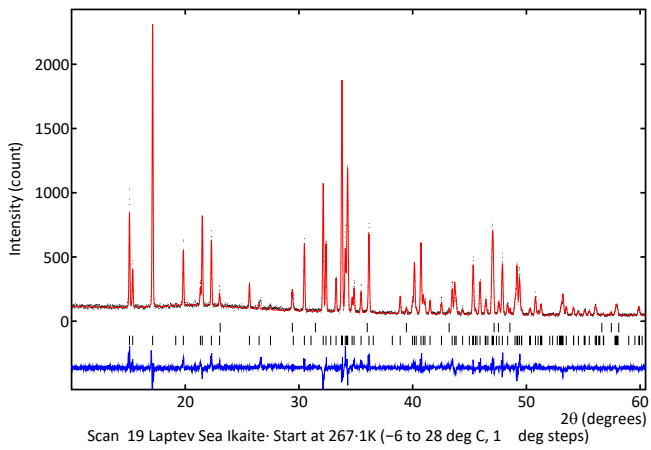
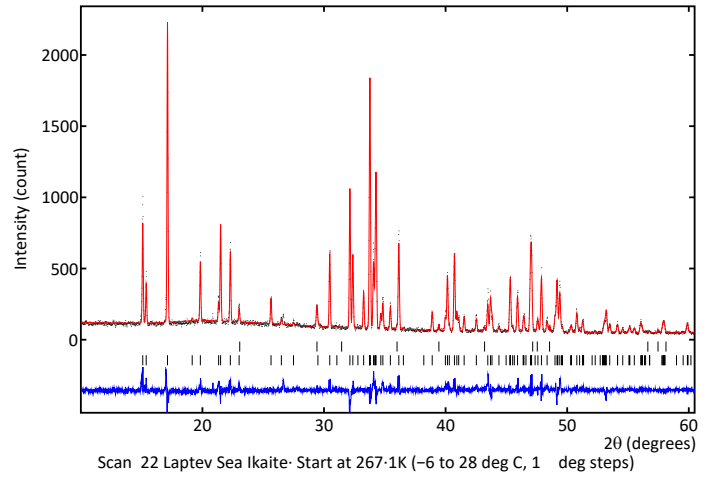
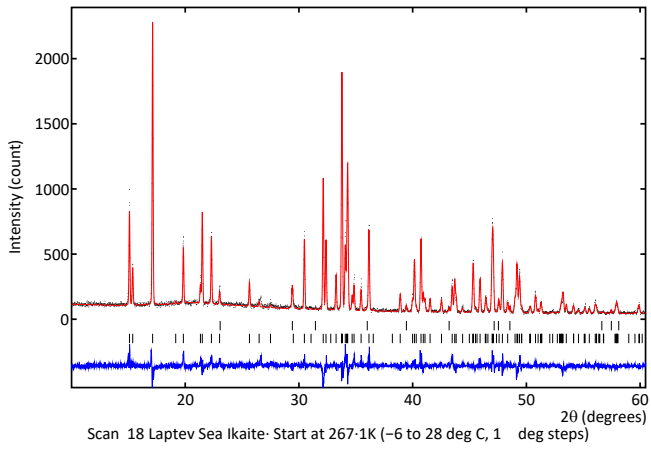
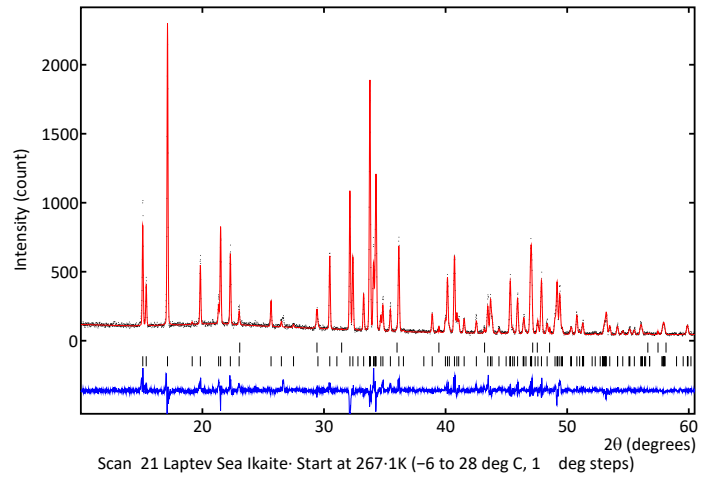
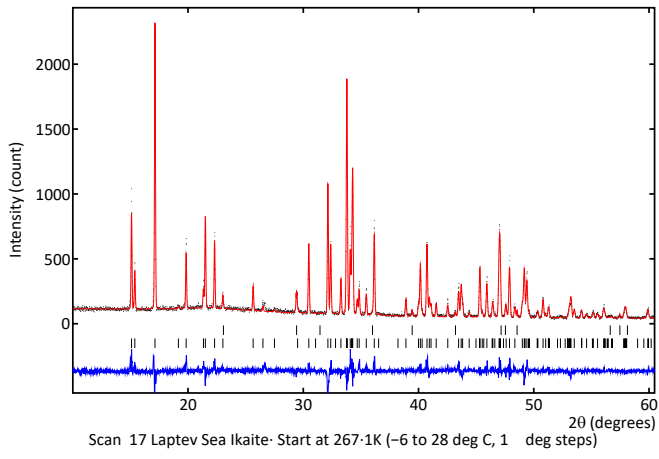


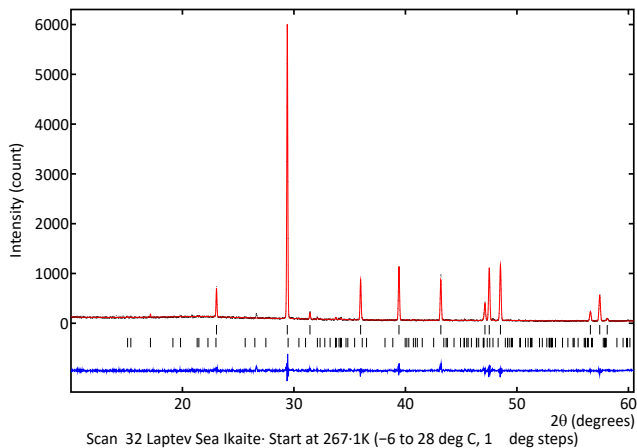
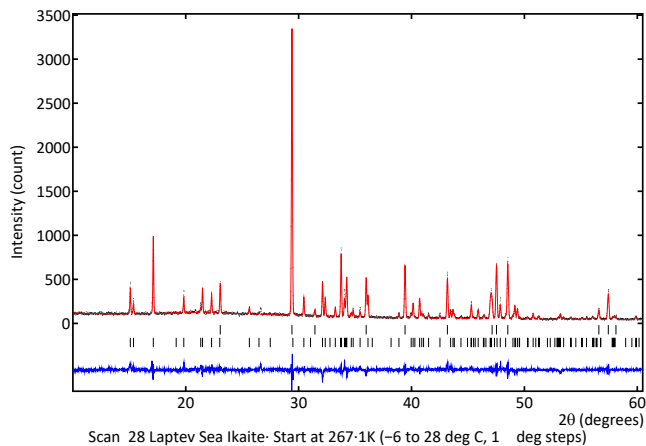
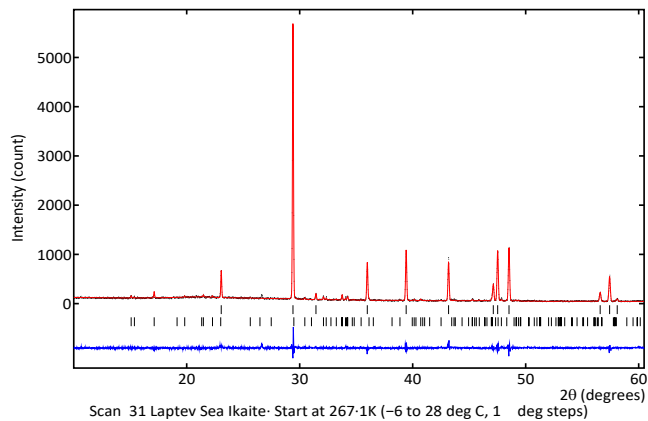
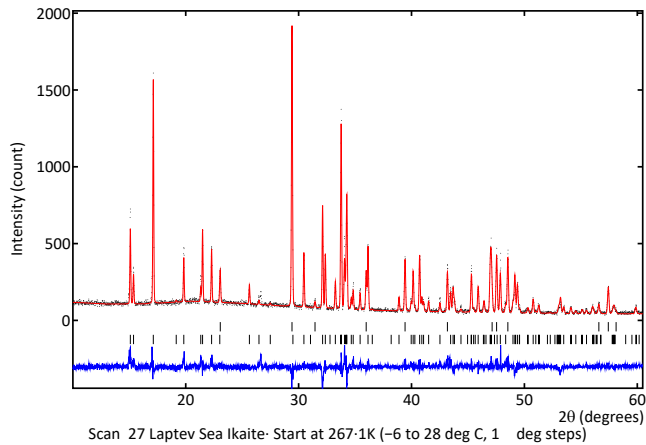
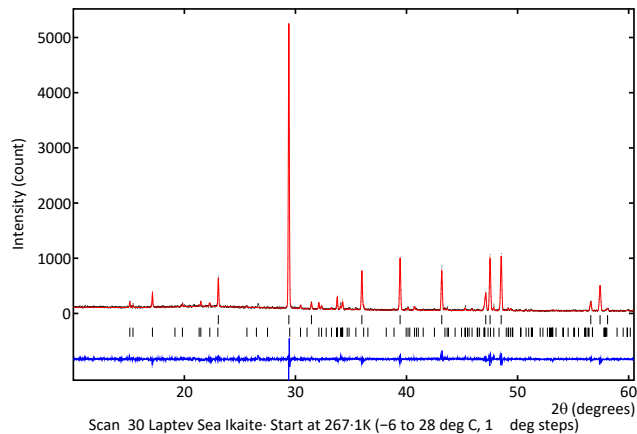
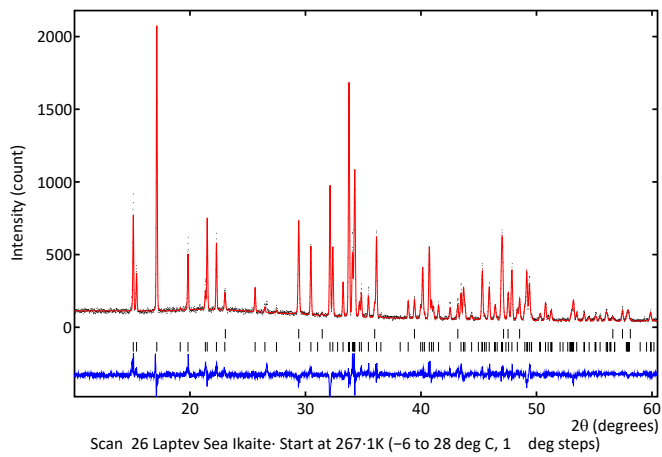
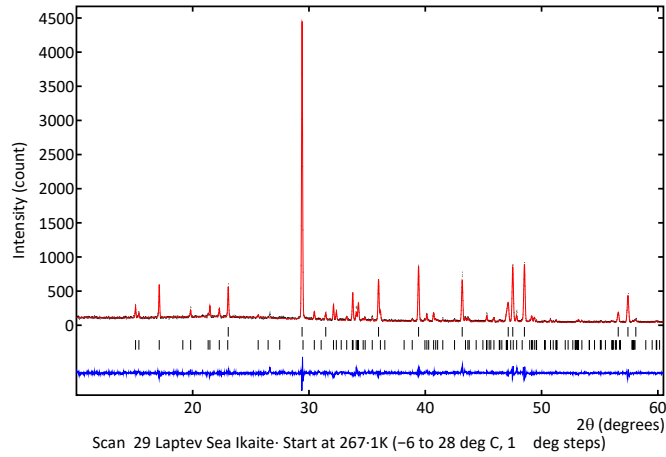
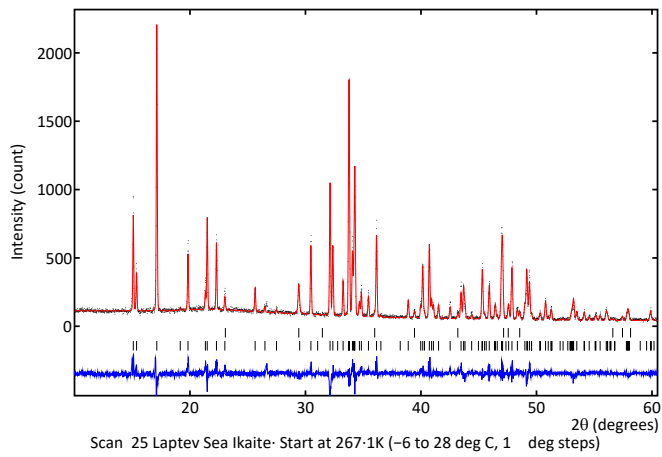


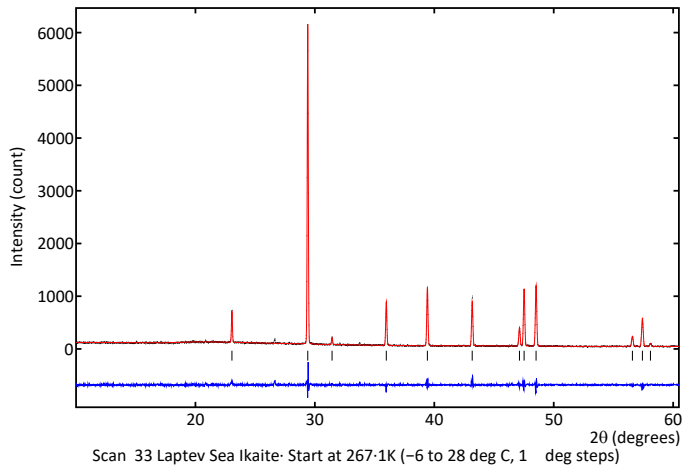
Laptev Sea 1



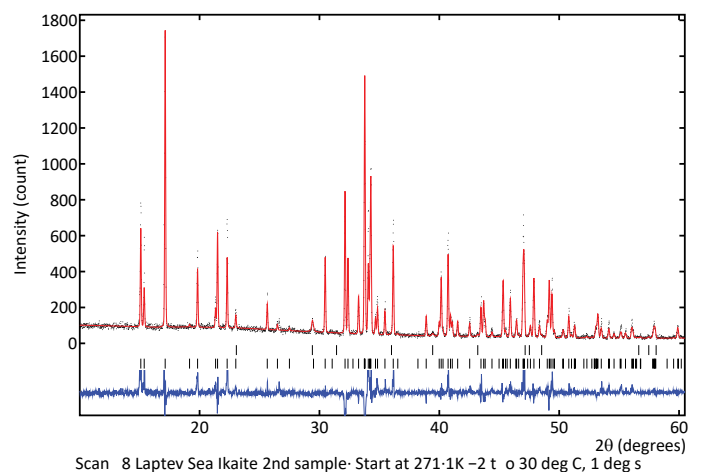
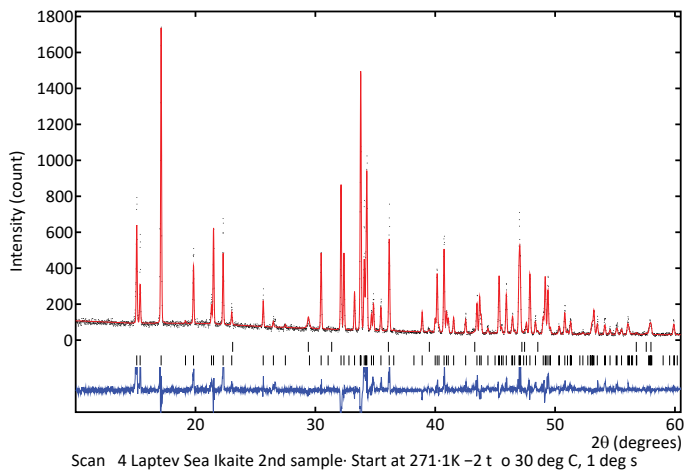
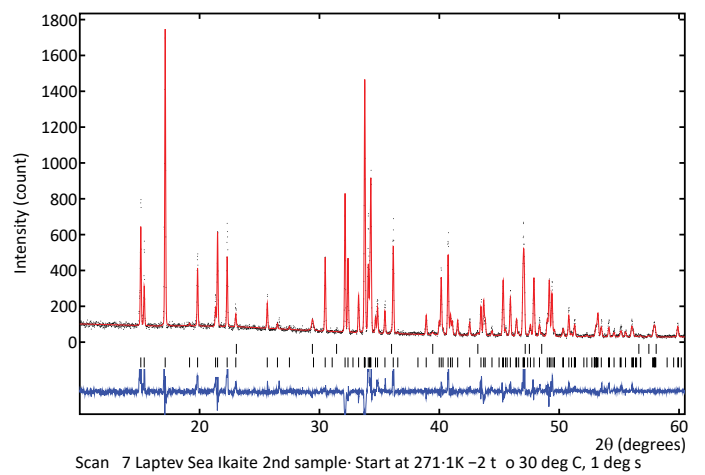
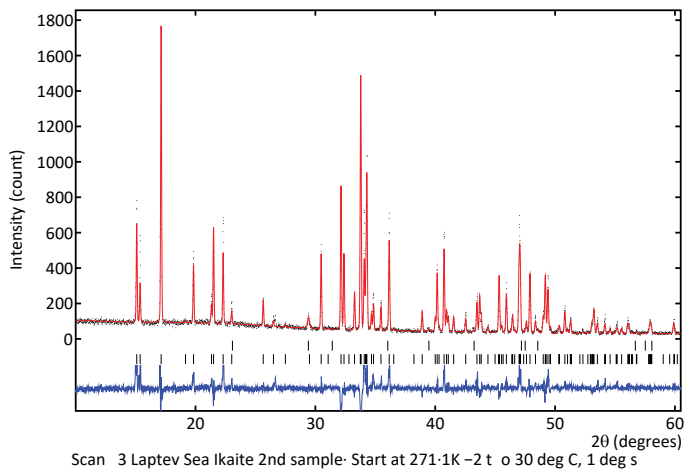
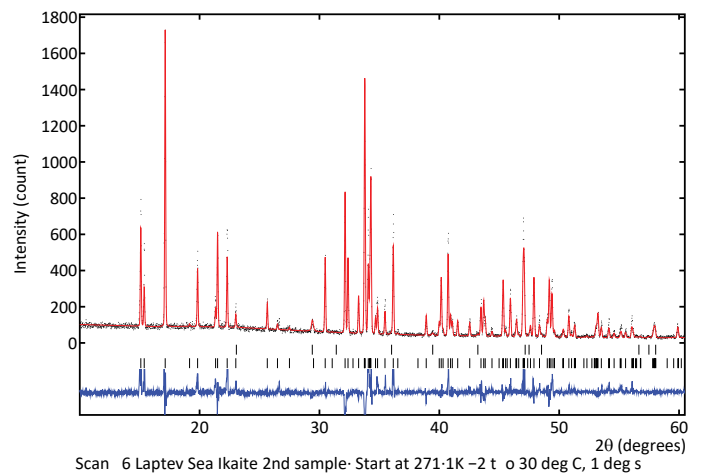
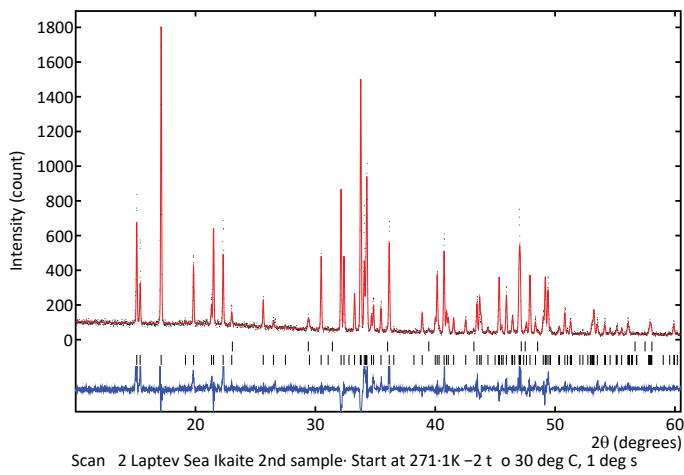
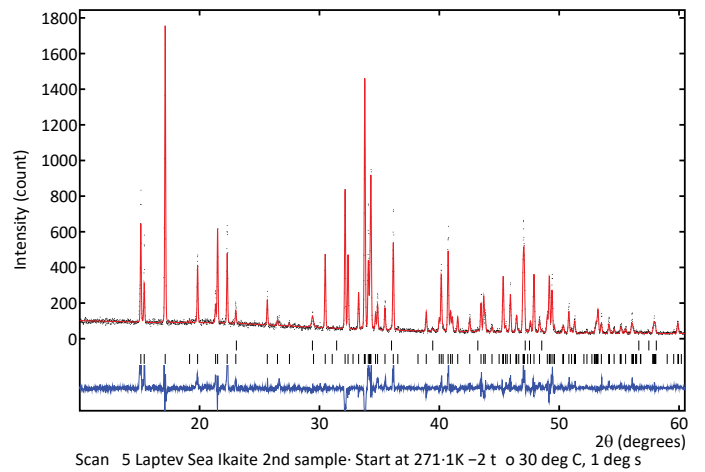
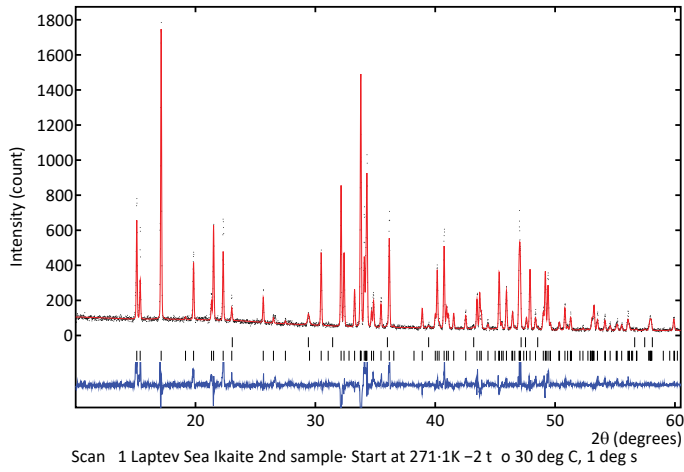


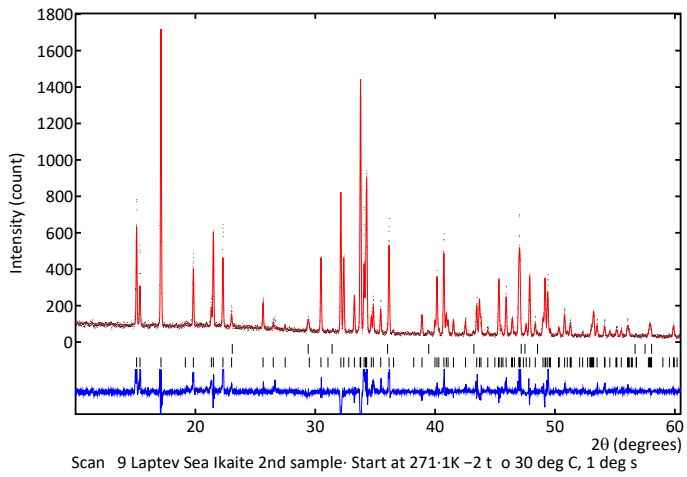




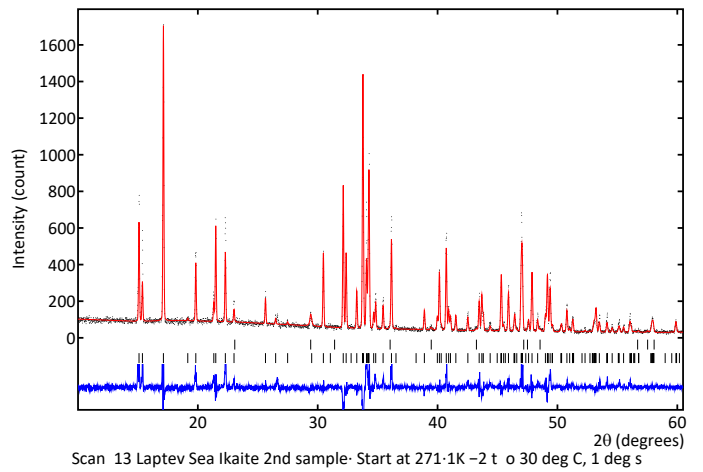


Laptev Sea 2

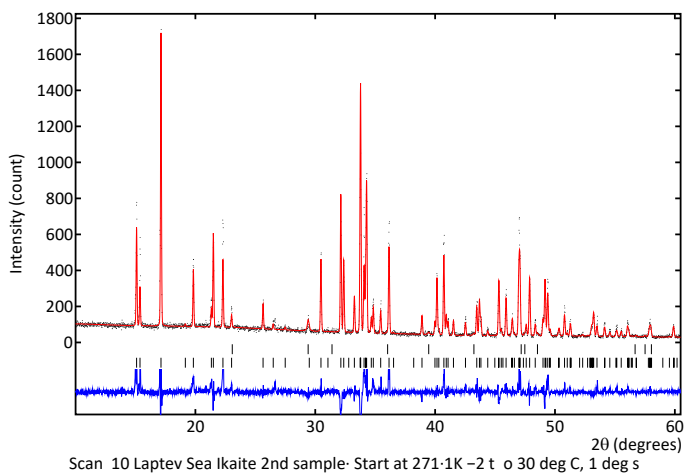




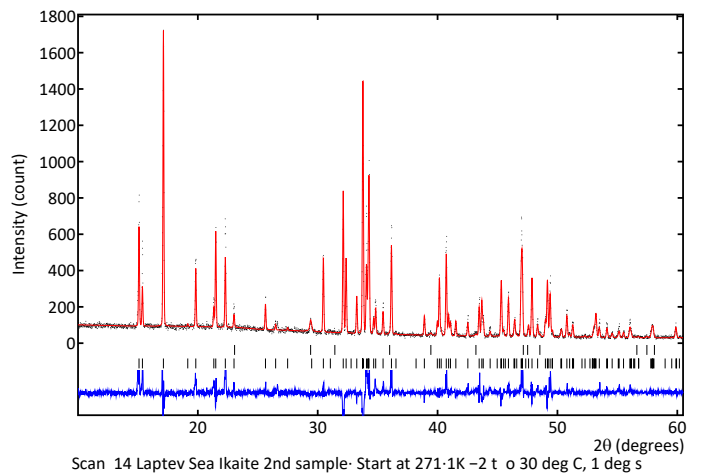
Scan 9 Laptev Sea Ikaite 2nd sample- Start at 271:1K -2 t o 30 deg C, 1 deg s



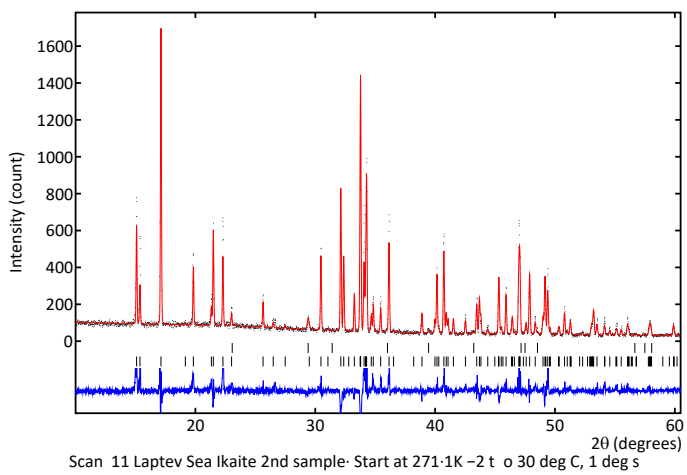
Scan 13 Laptev Sea Ikaite 2nd sample- Start at 271:1K -2 t o 30 deg C, 1 deg s



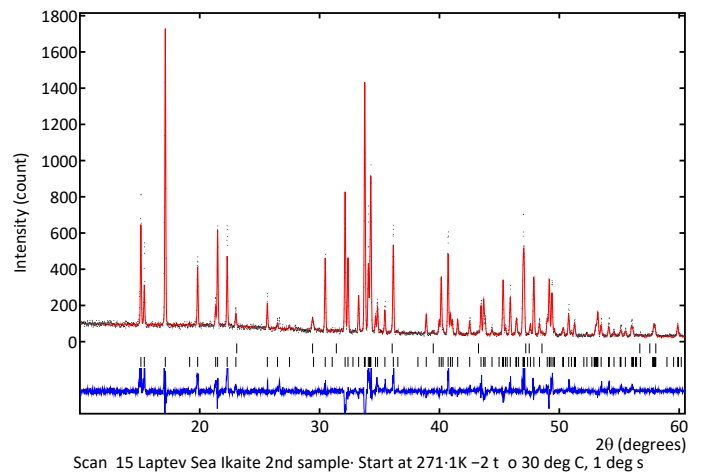
Scan 10 Laptev Sea Ikaite 2nd sample- Start at 271:1K -2 t o 30 deg C, 1 deg s



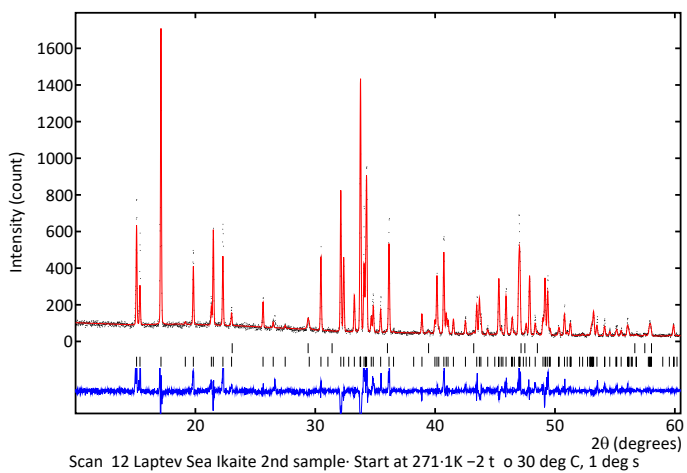
Scan 14 Laptev Sea Ikaite 2nd sample- Start at 271:1K -2 t o 30 deg C, 1 deg s



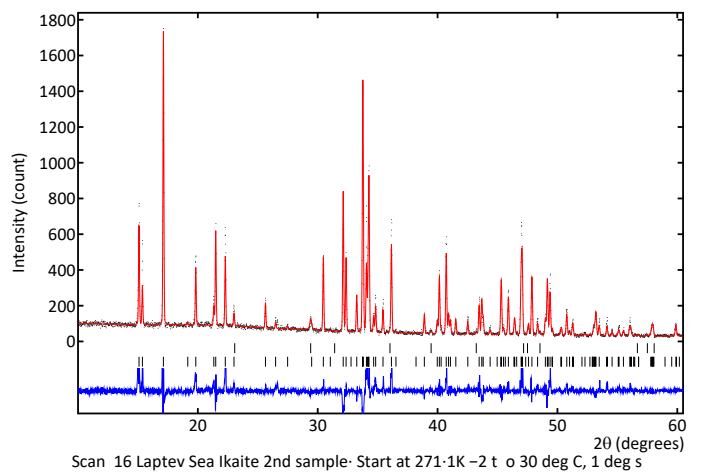
Scan 11 Laptev Sea Ikaite 2nd sample- Start at 271:1K -2 t o 30 deg C, 1 deg s



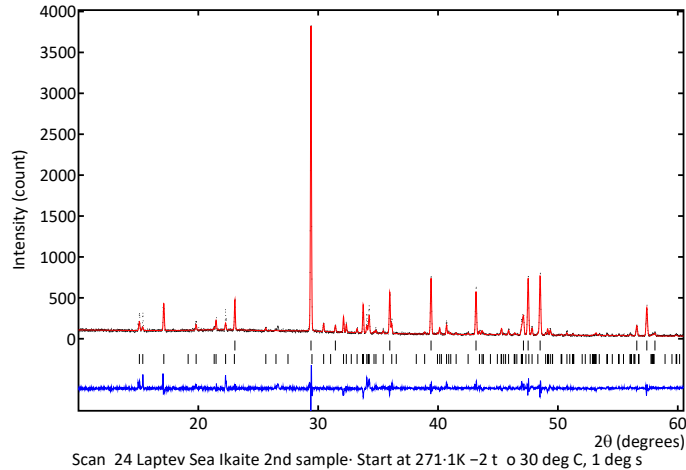
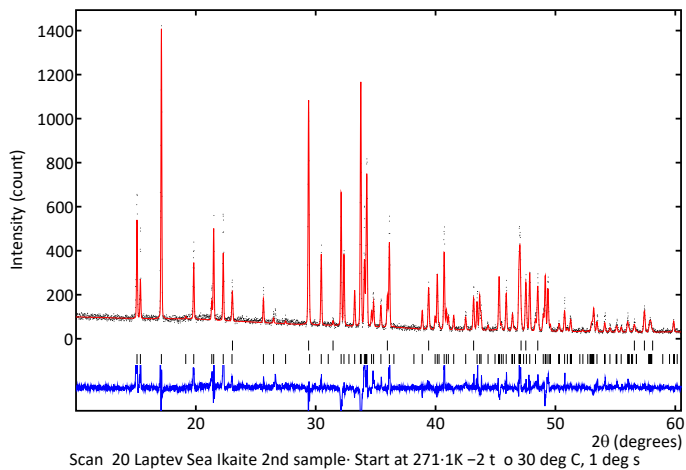
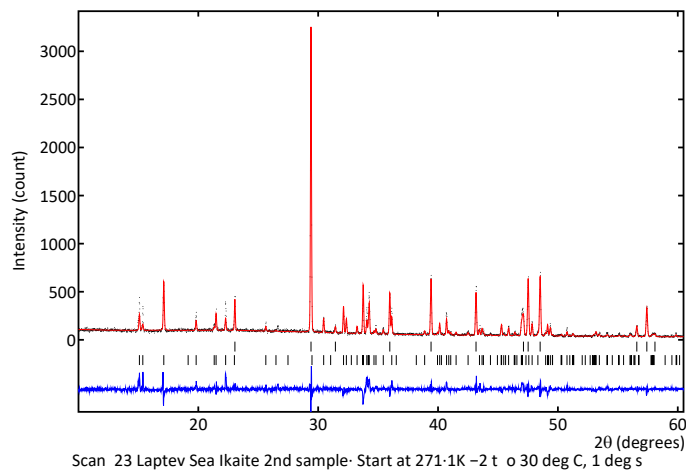
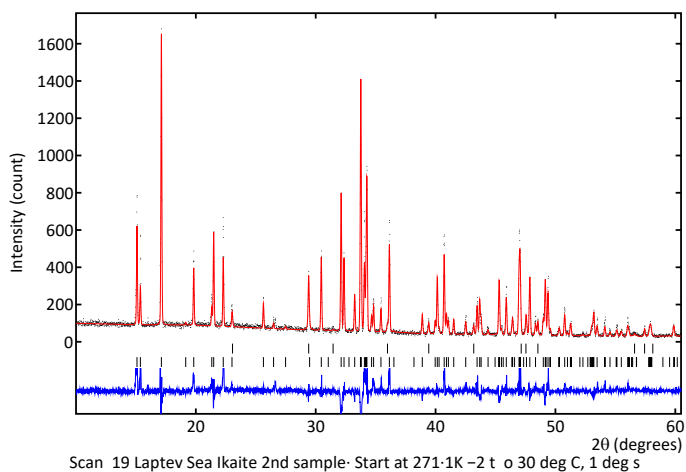
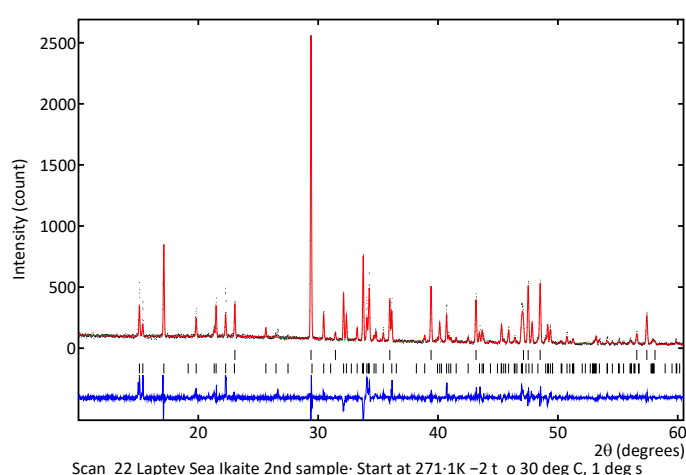
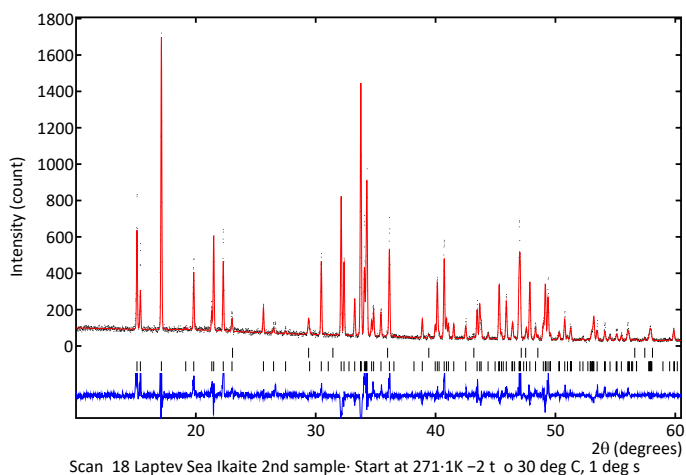
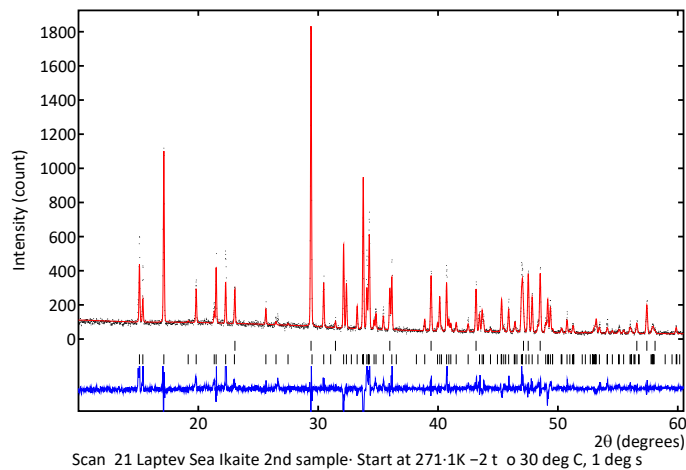
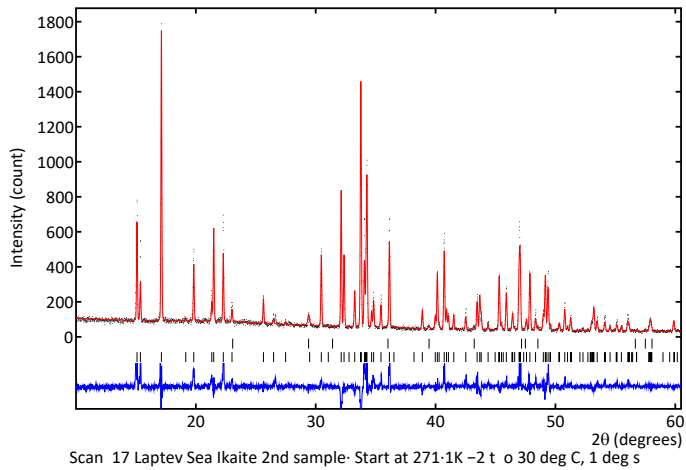
Scan 15 Laptev Sea Ikaite 2nd sample- Start at 271:1K -2 t o 30 deg C, 1 deg s

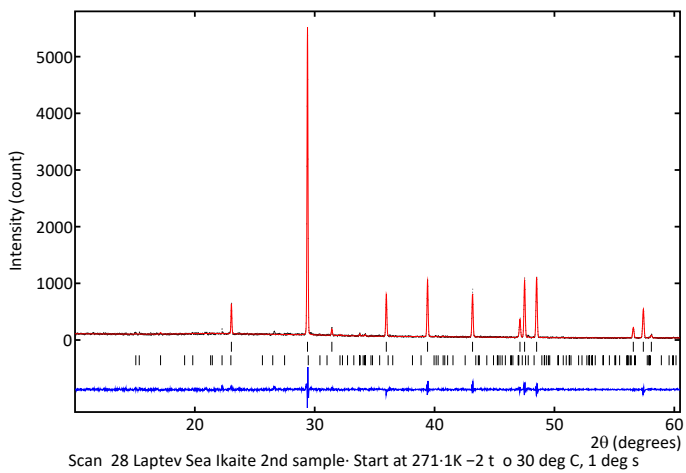
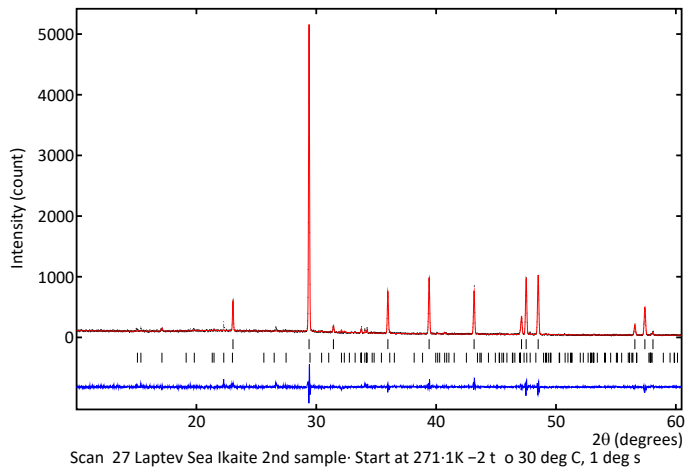
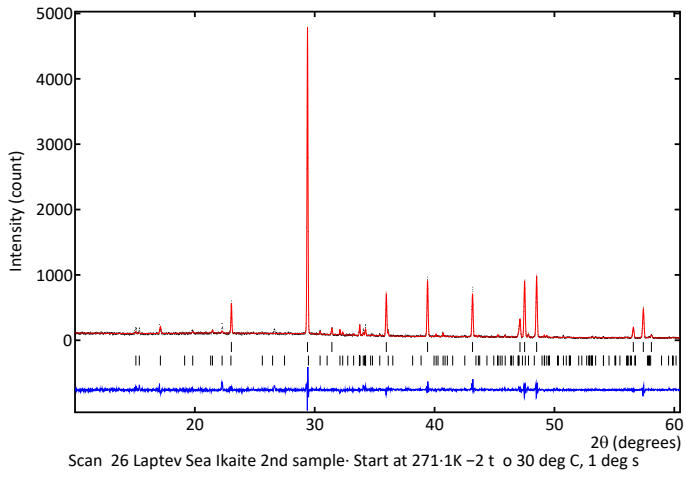
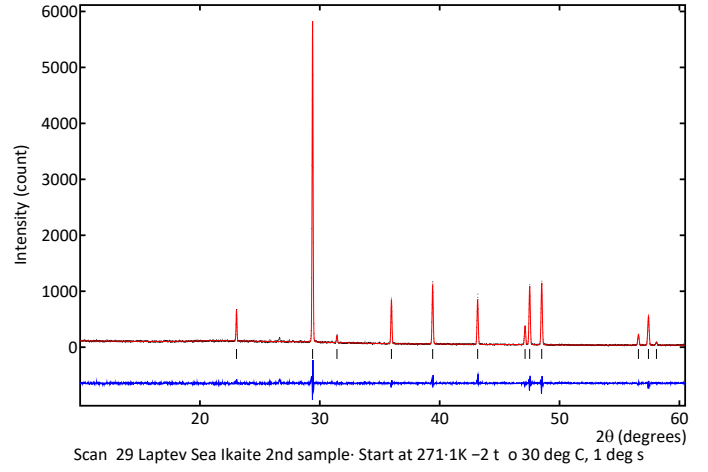
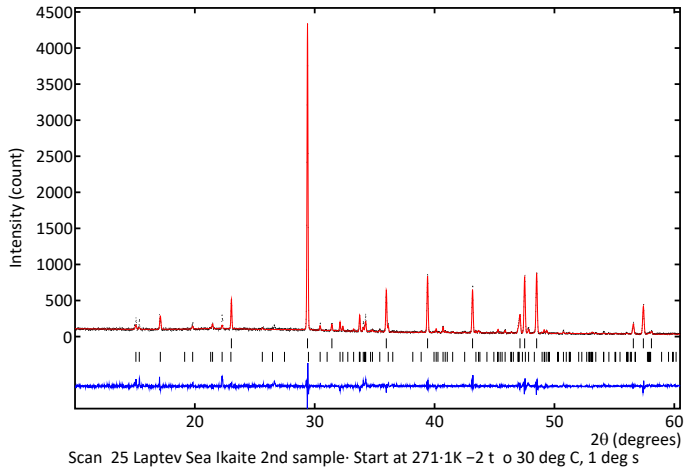


Scan 12 Laptev Sea Ikaite 2nd sample- Start at 271:1K -2 t o 30 deg C, 1 deg s

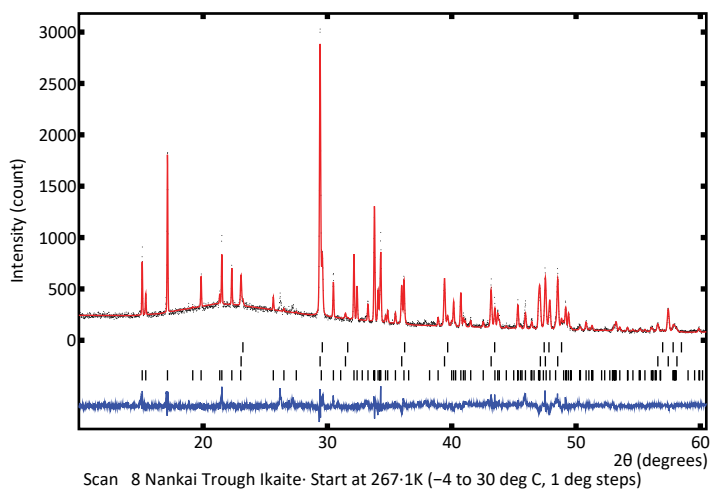
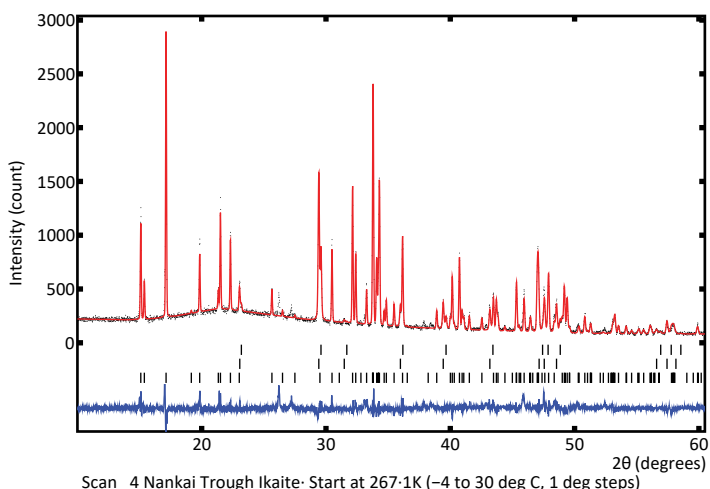
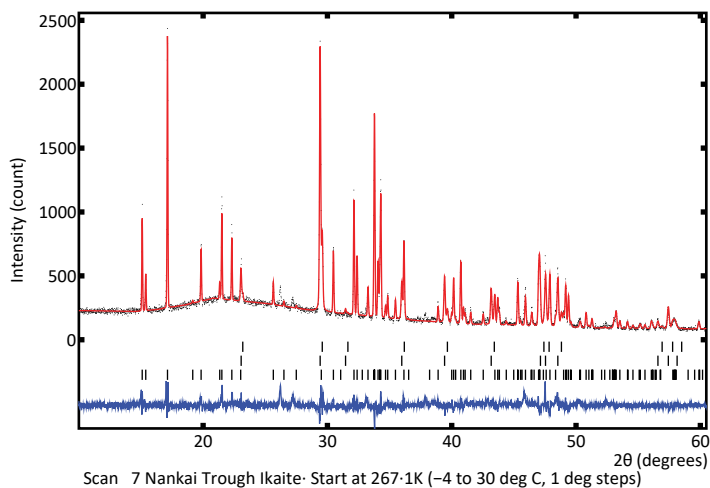
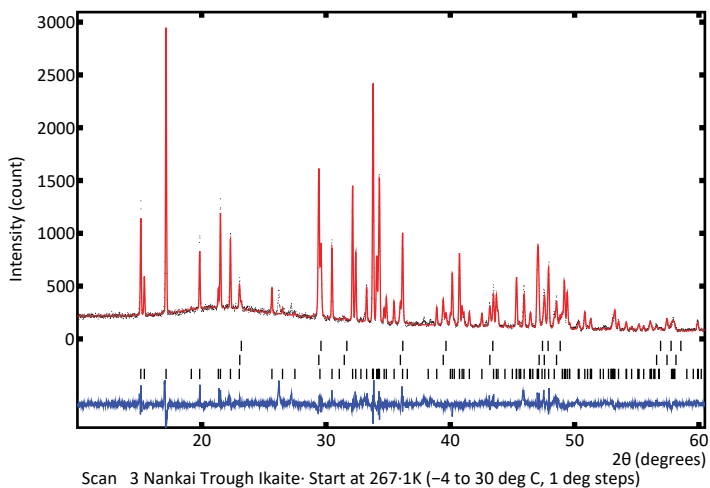
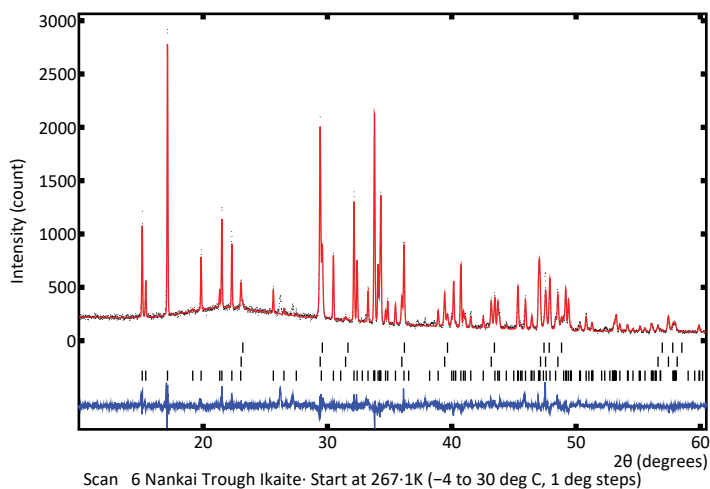
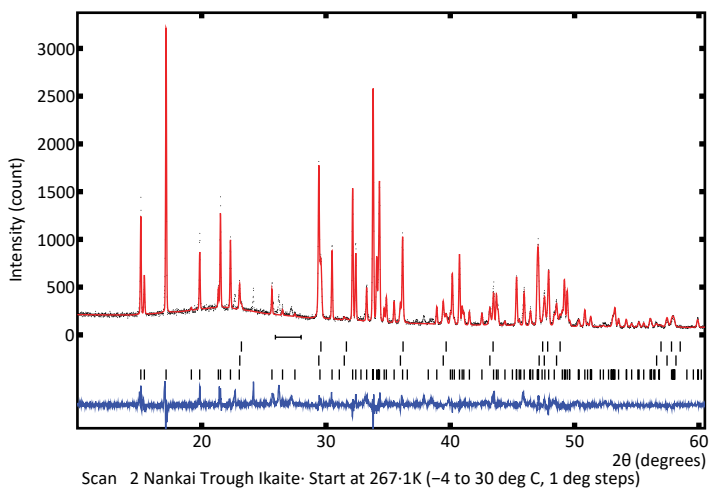
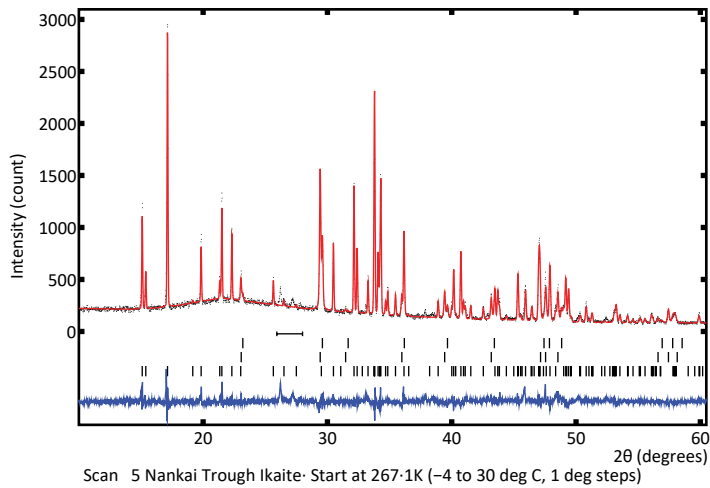
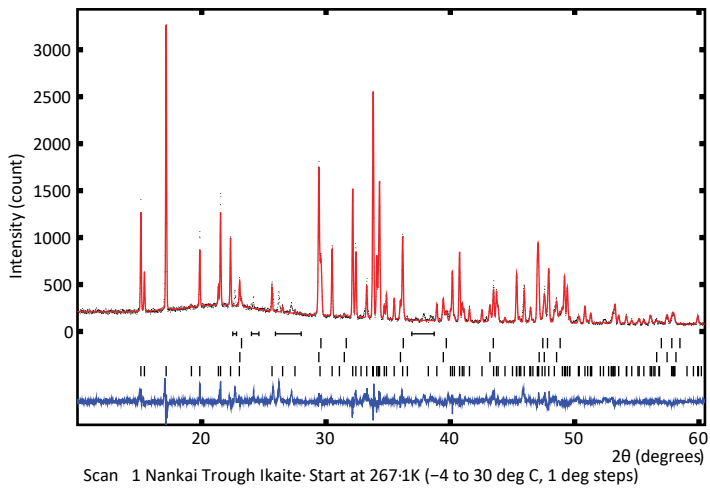


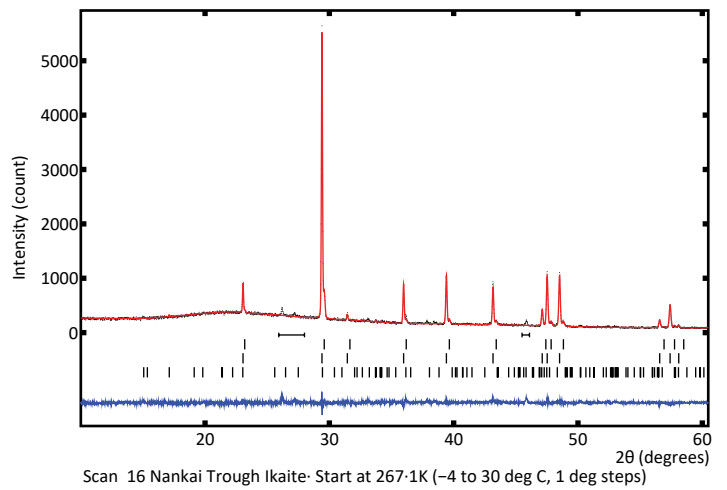
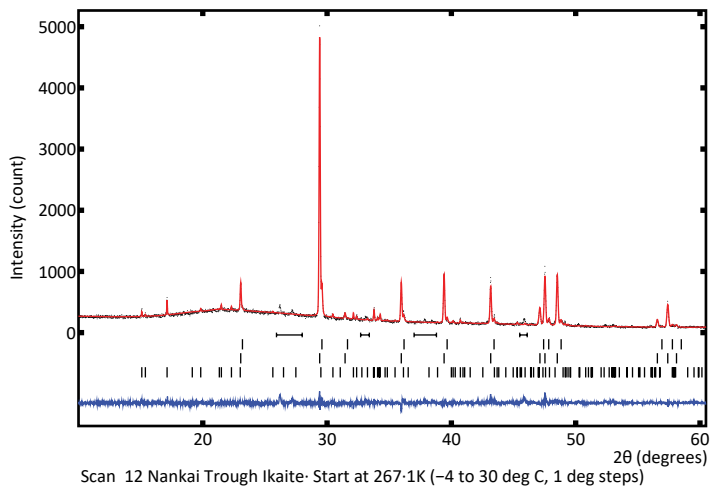
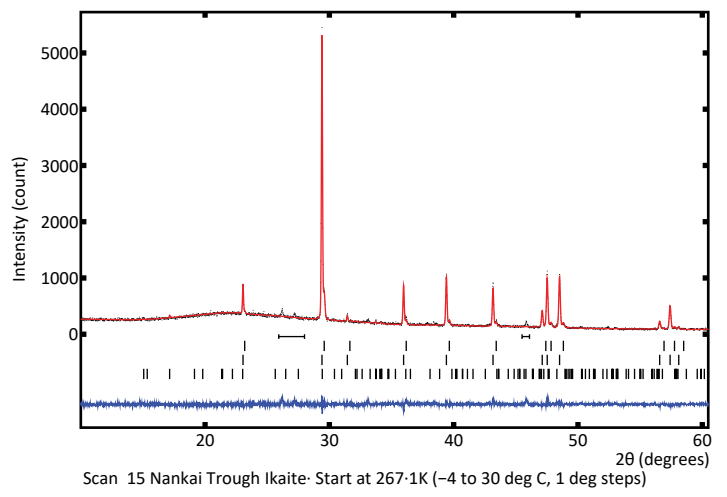
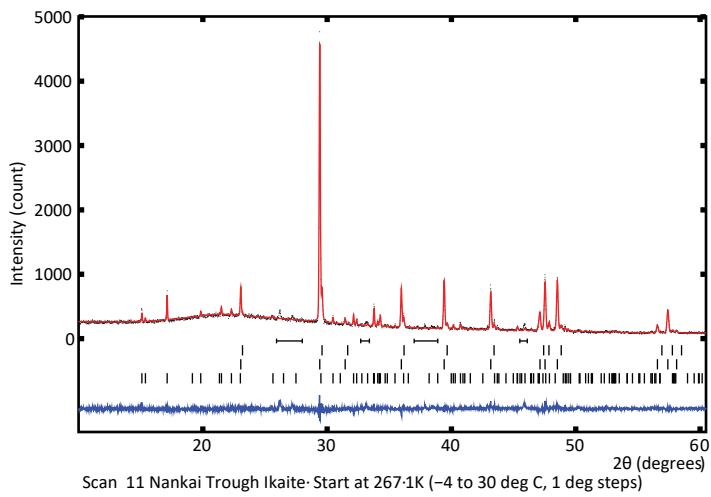
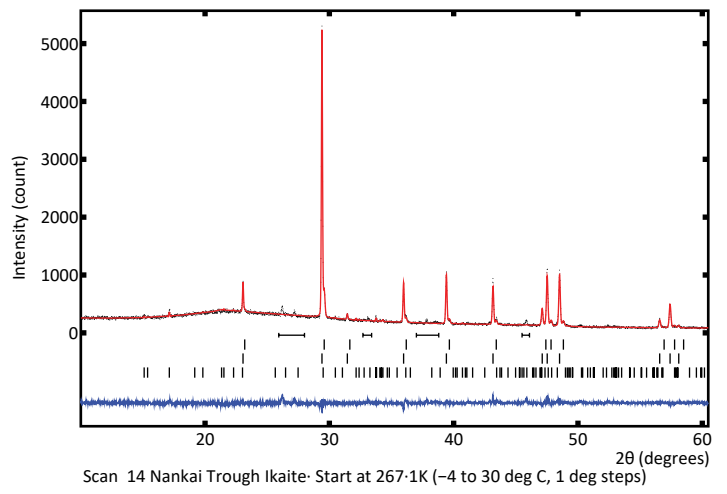
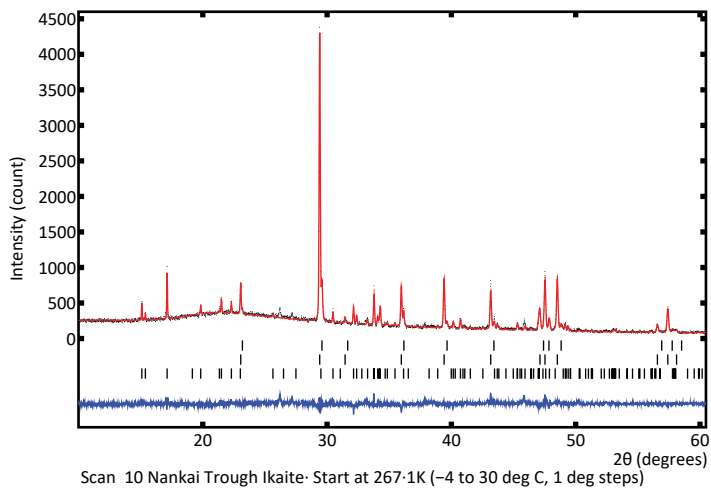
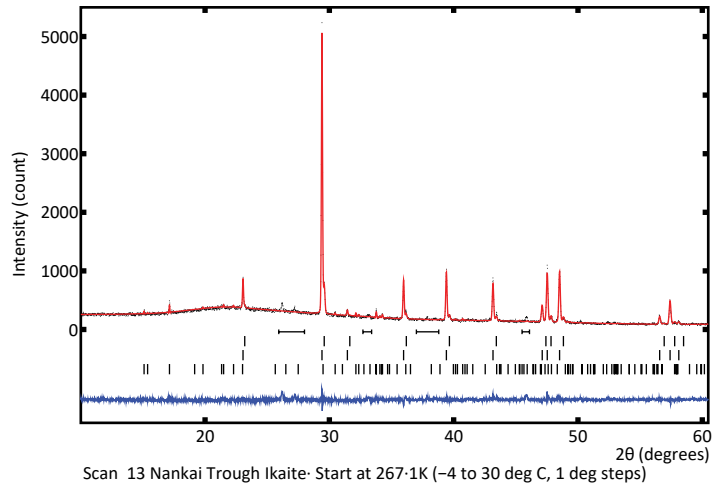
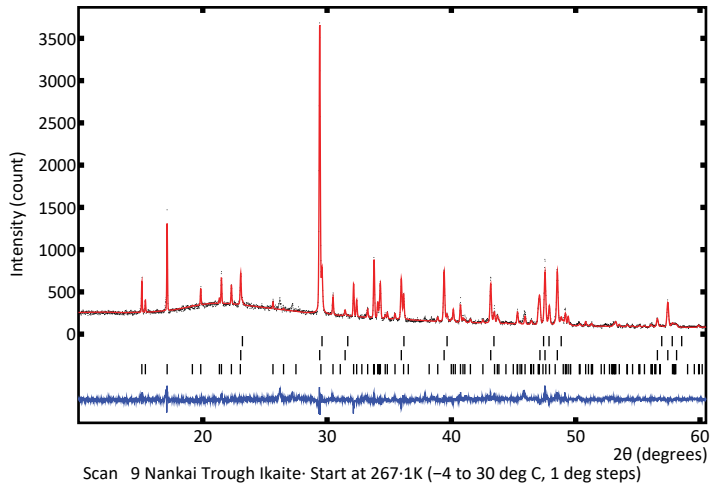
Scan 16 Laptev Sea Ikaite 2nd sample- Start at 271:1K -2 t o 30 deg C, 1 deg s

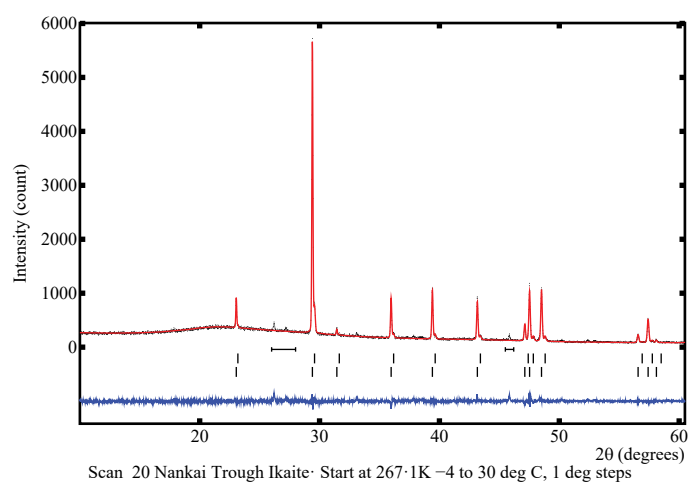
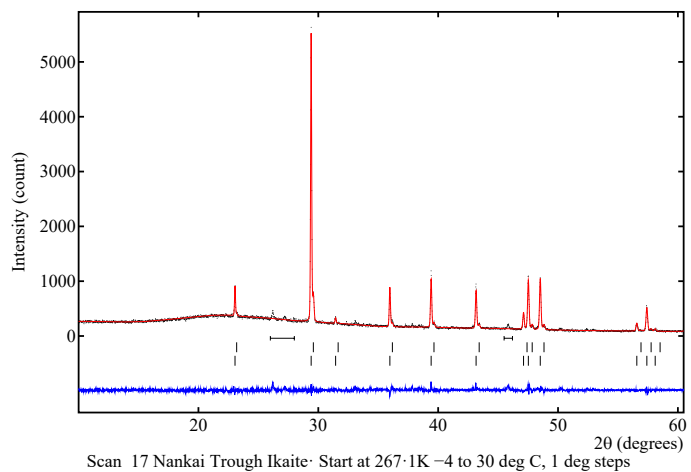




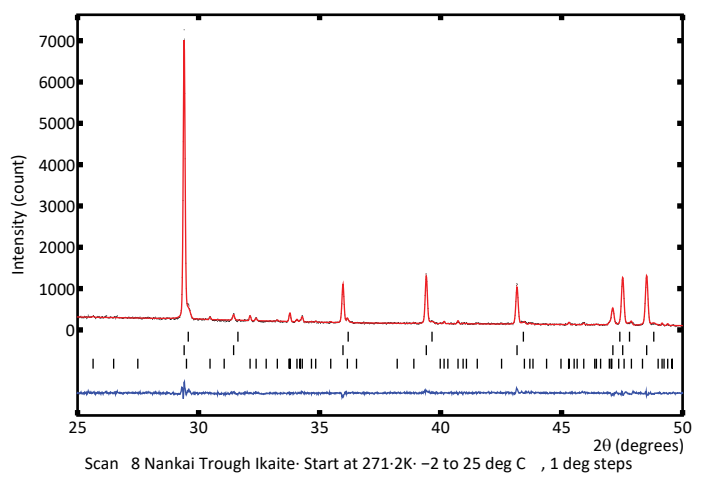
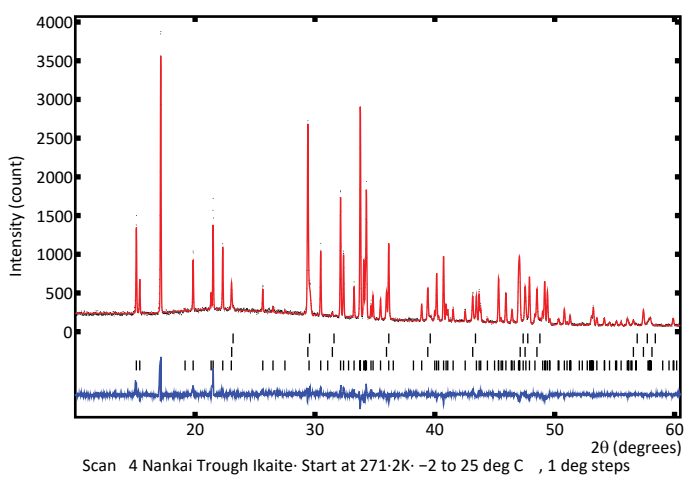
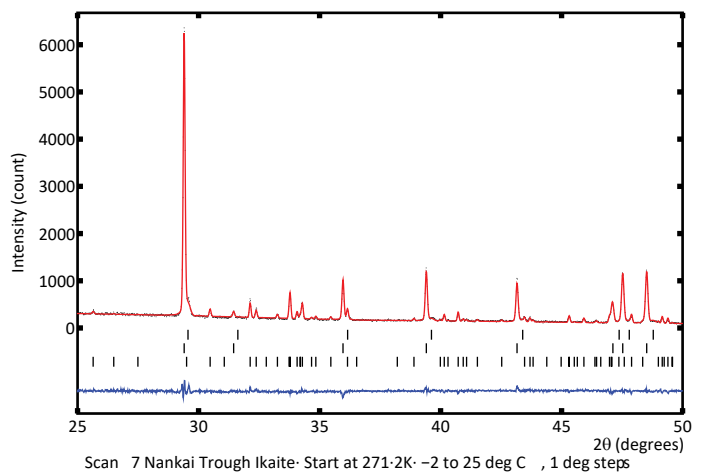
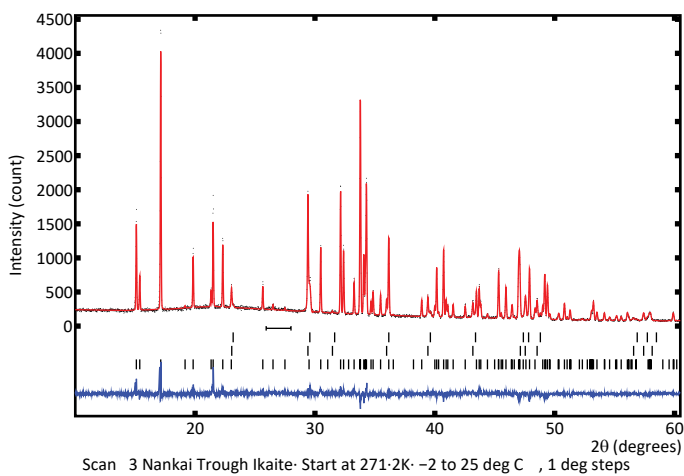
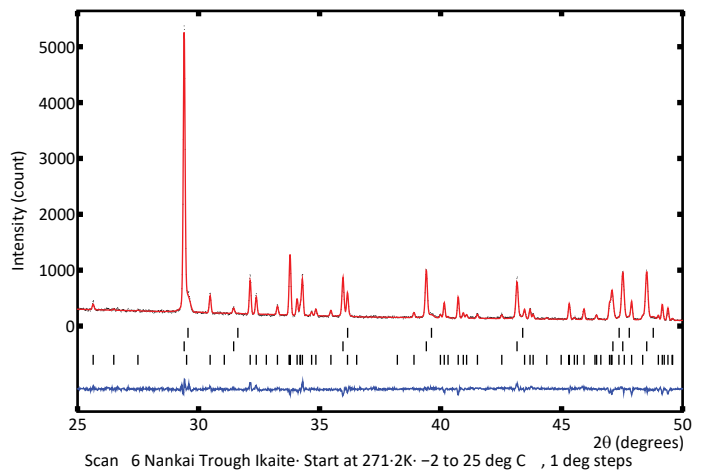
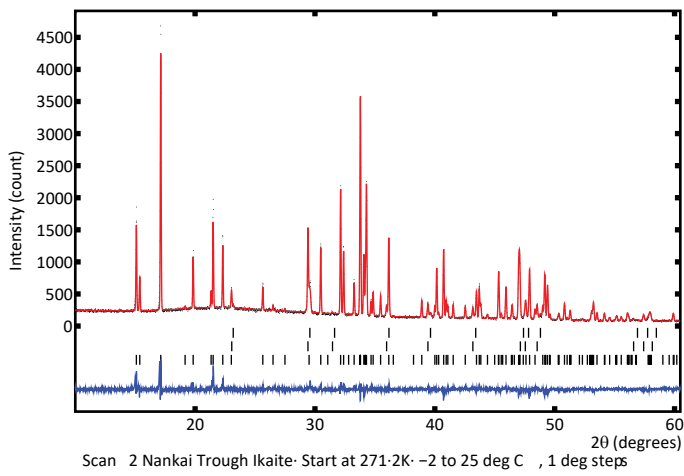
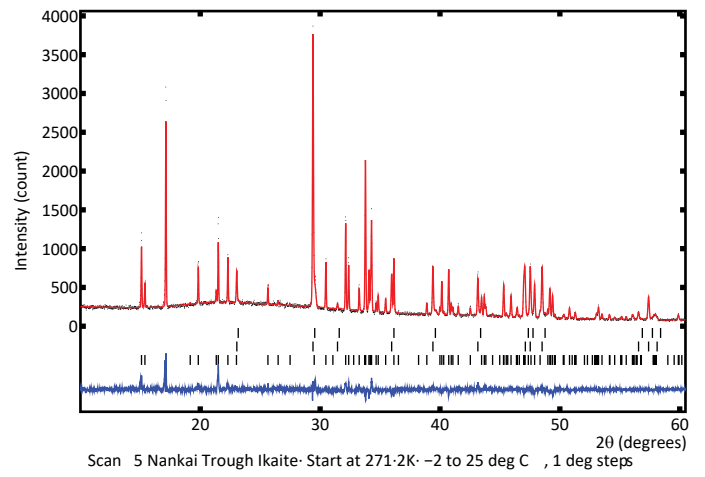
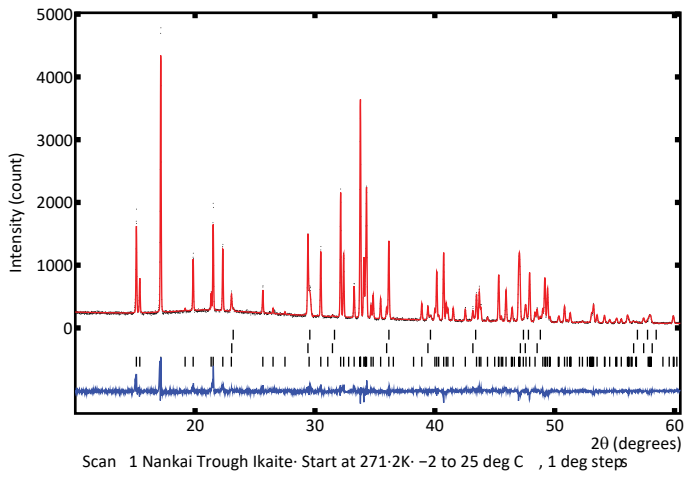
Nankai Trough 1

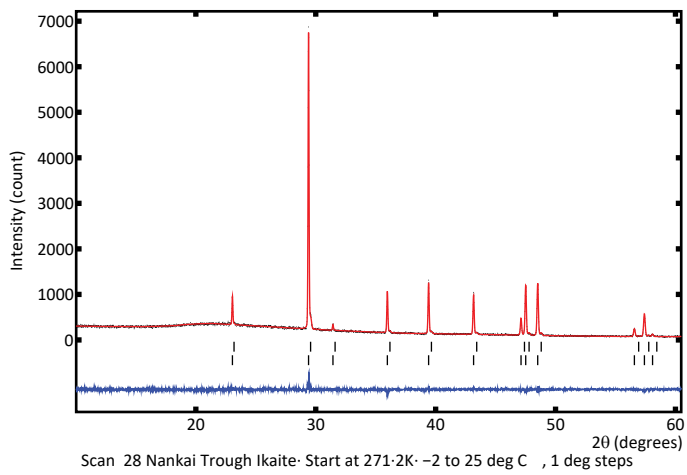
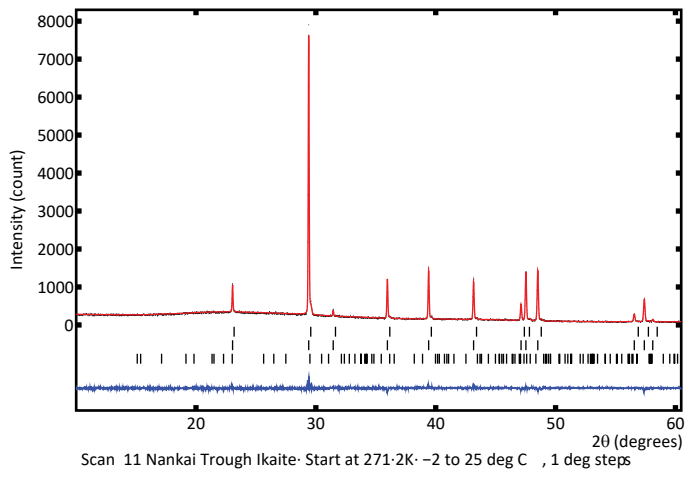
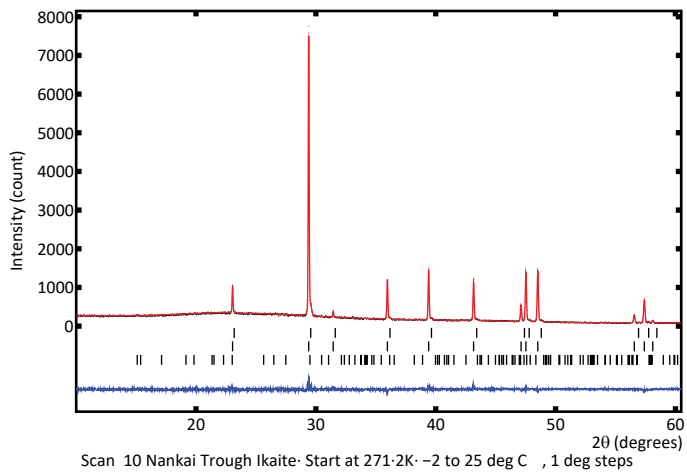
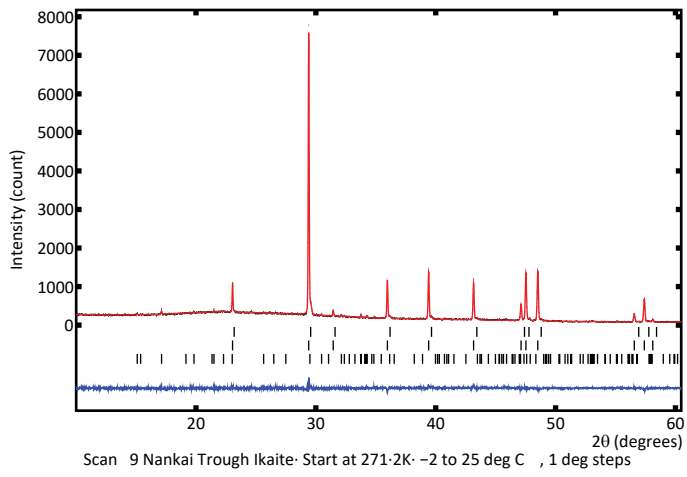






Nankai Trough 2





South Georgia

