

### Supporting Information

#### Unlocking MOF A520 Synthesis: Investigating Critical Parameters

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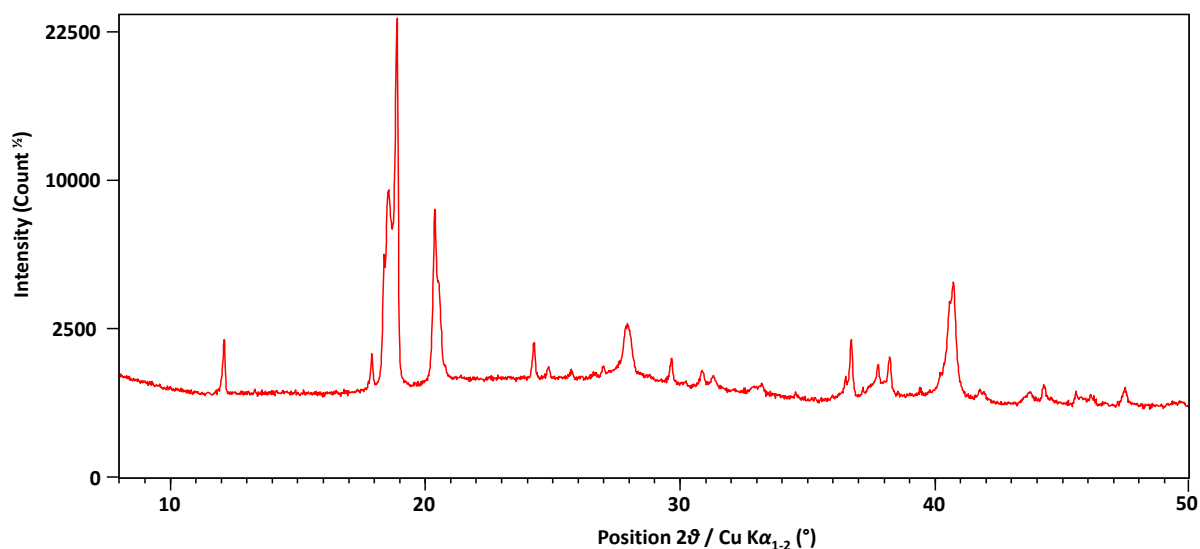


Figure S1. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 1

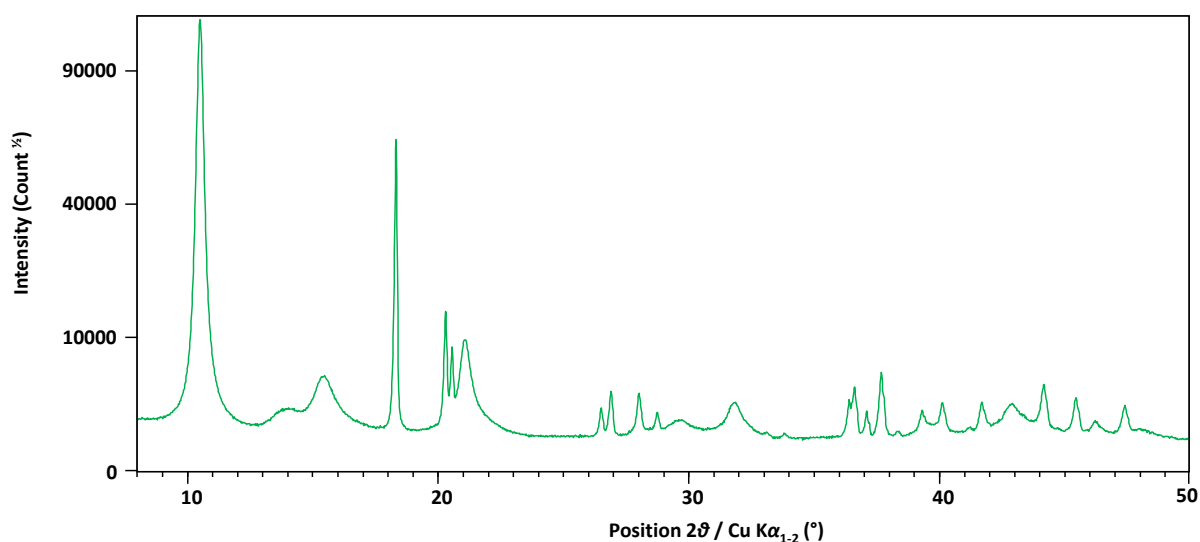


Figure S2. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 2

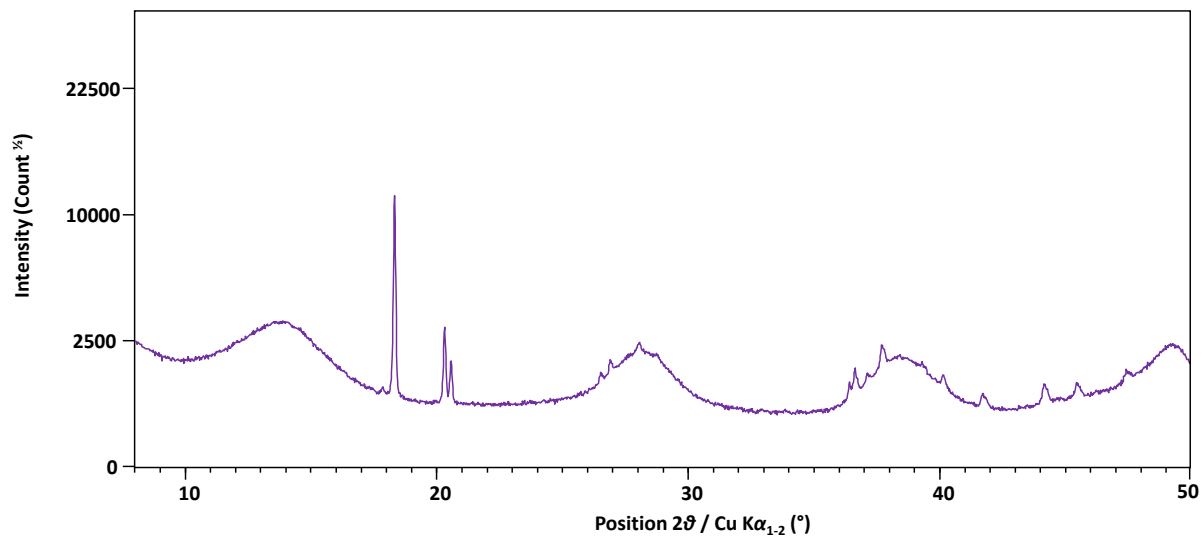


Figure S3. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 3

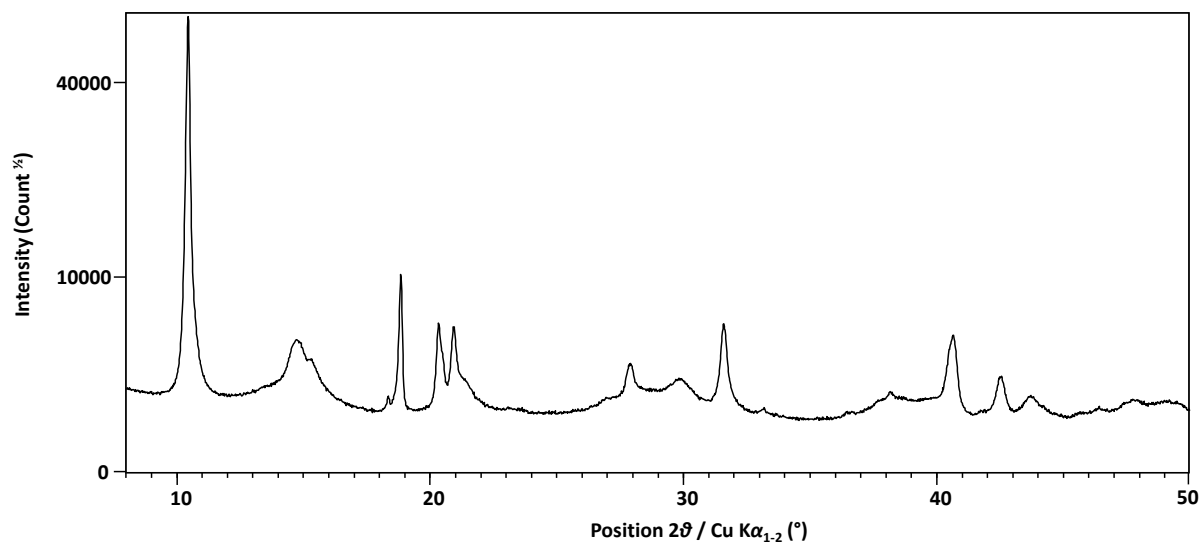


Figure S4. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 4

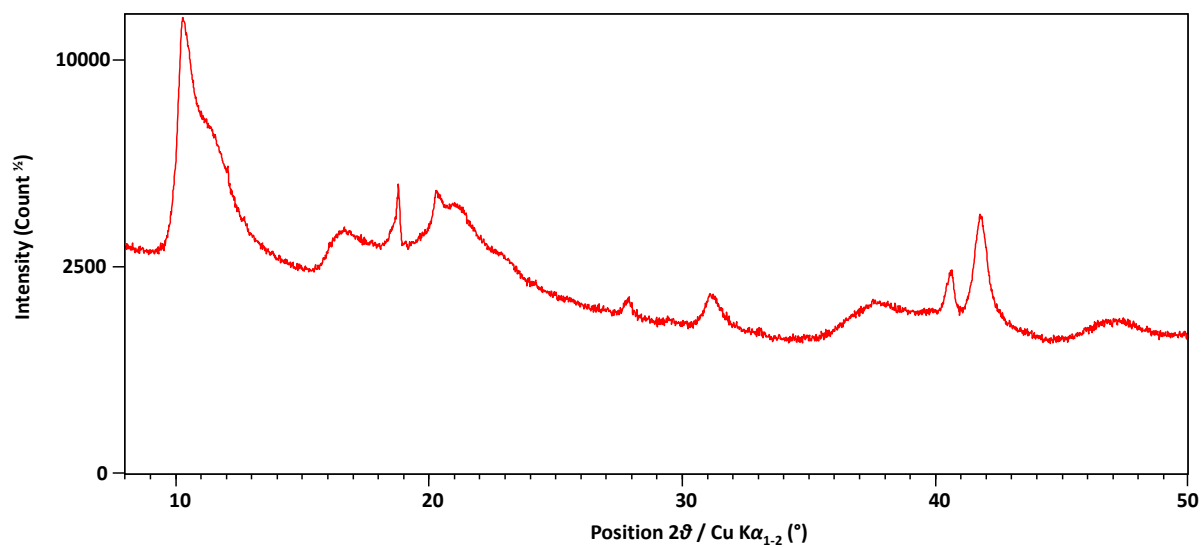


Figure S5. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 5

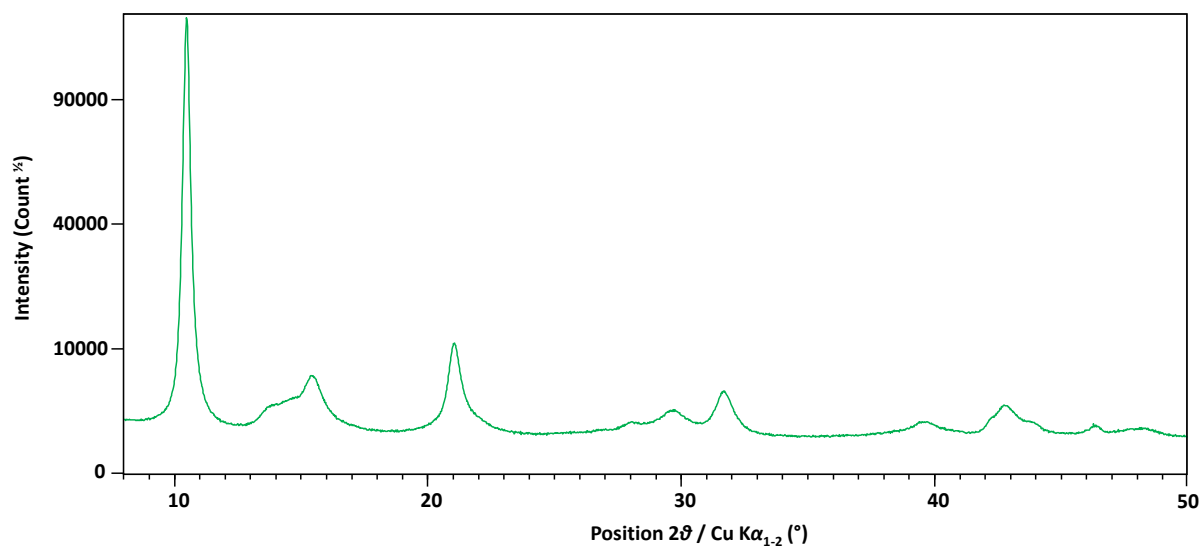


Figure S6. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 6

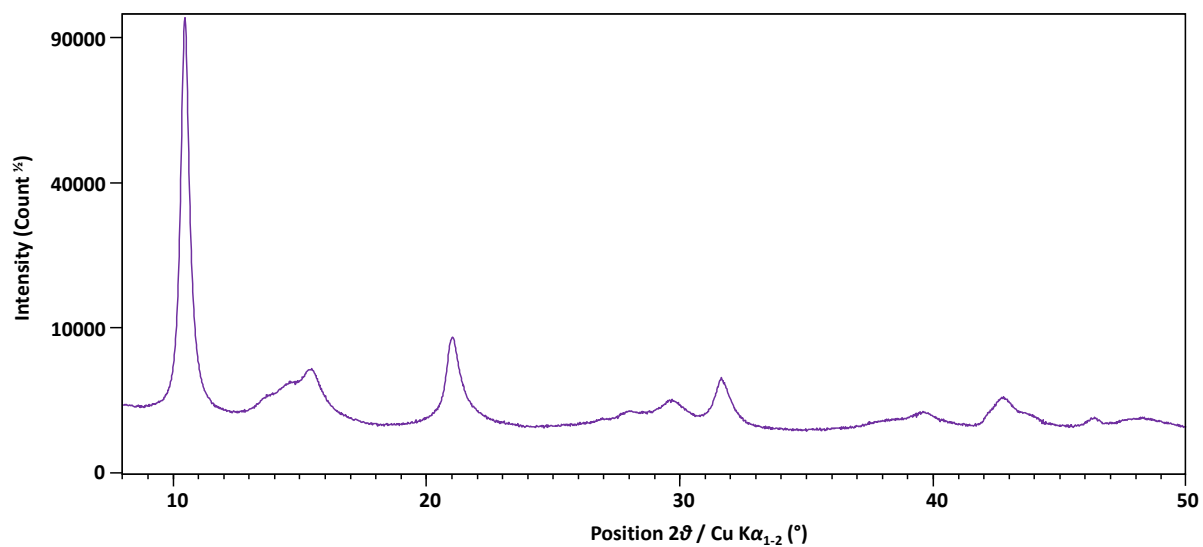


Figure S7. XRD patterns at wide  $2\theta$  angles ( $\text{Cu K}\alpha$  radiation) of Sample 7

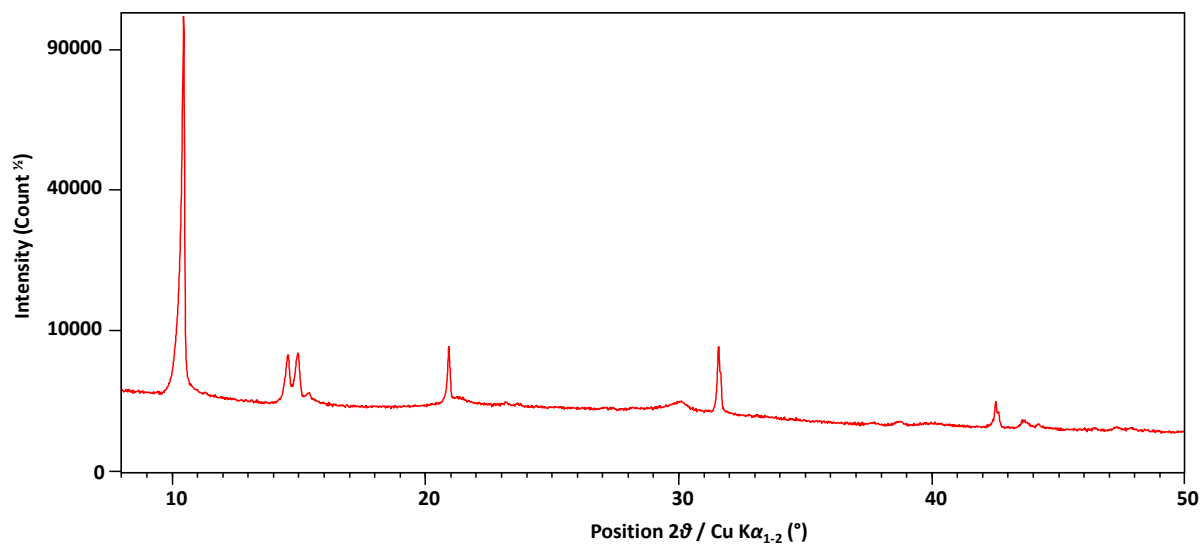


Figure S8. XRD patterns at wide  $2\theta$  angles ( $\text{Cu K}\alpha$  radiation) of Sample 8

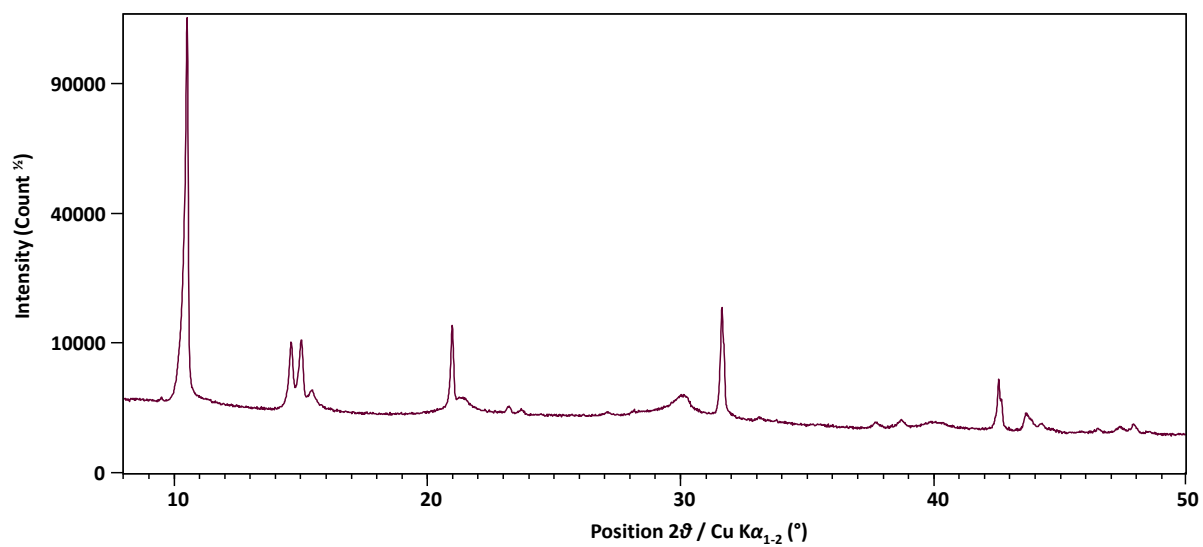


Figure S9. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 9

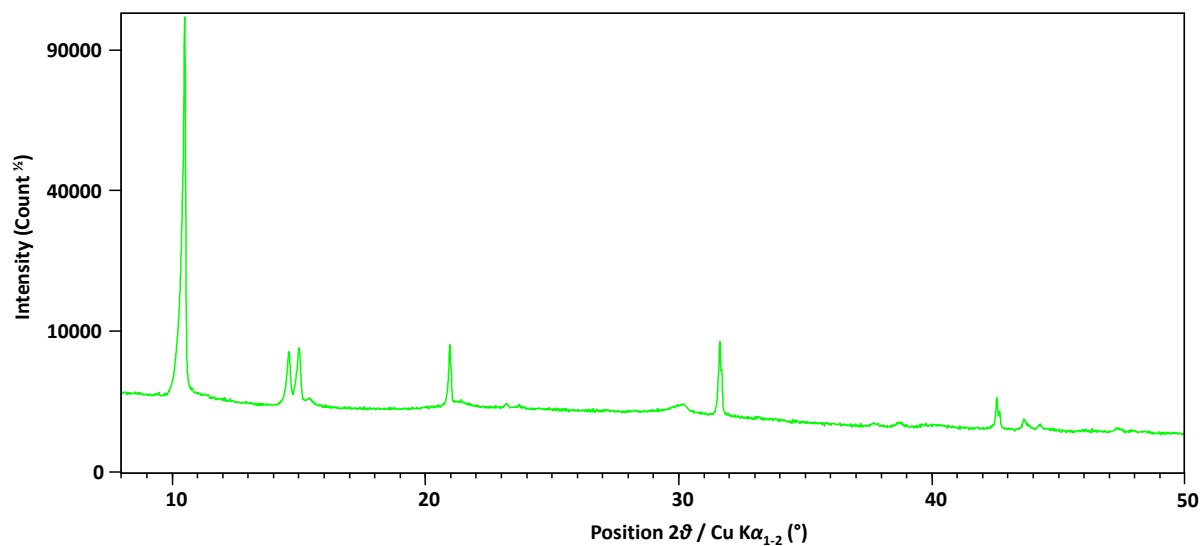


Figure S10. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 10

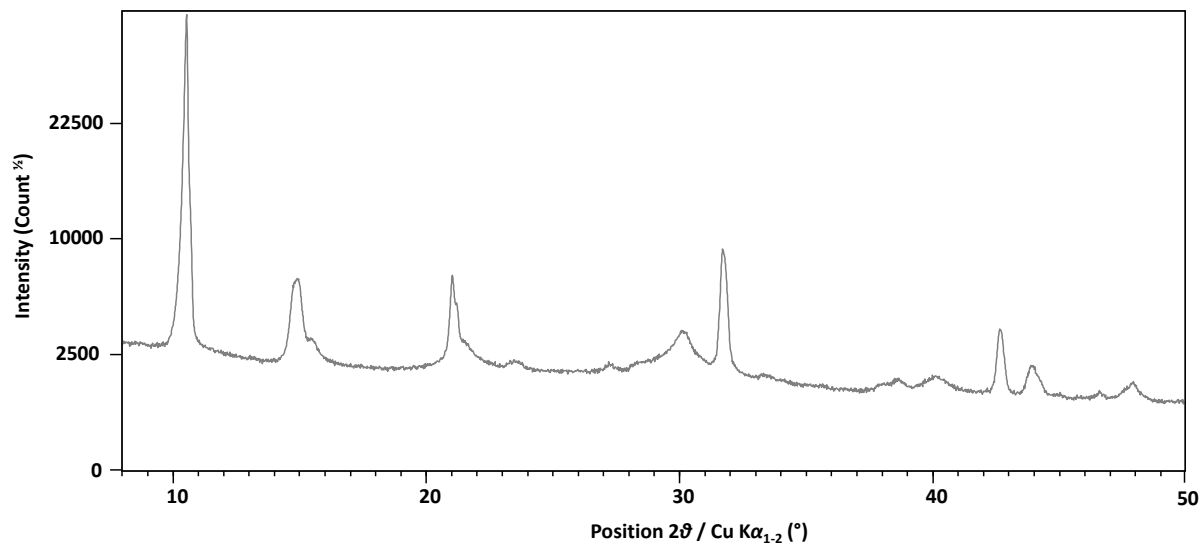


Figure S11. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 11

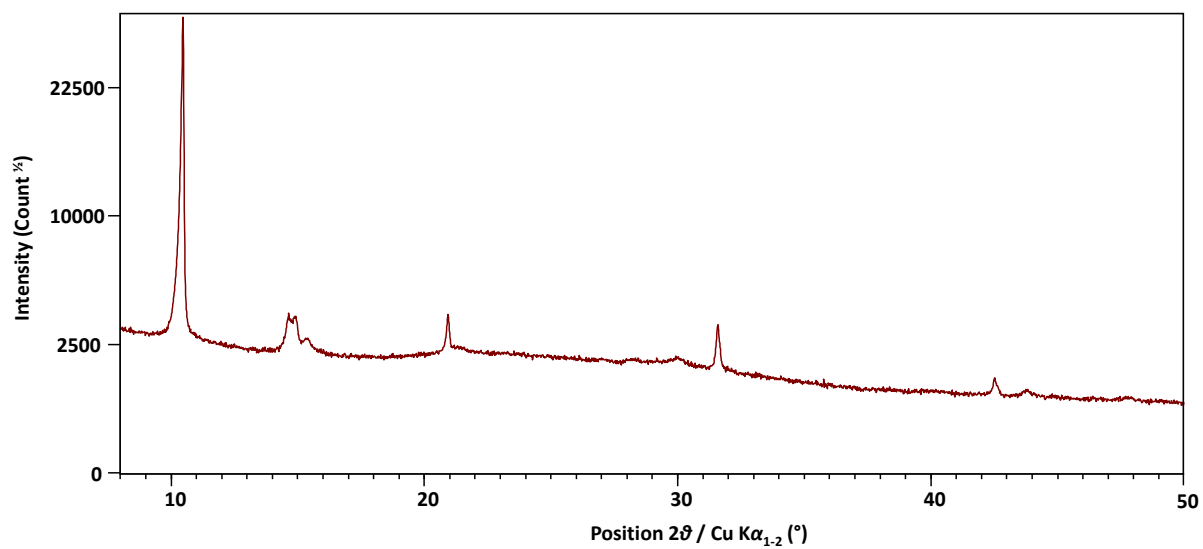


Figure S12. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 12

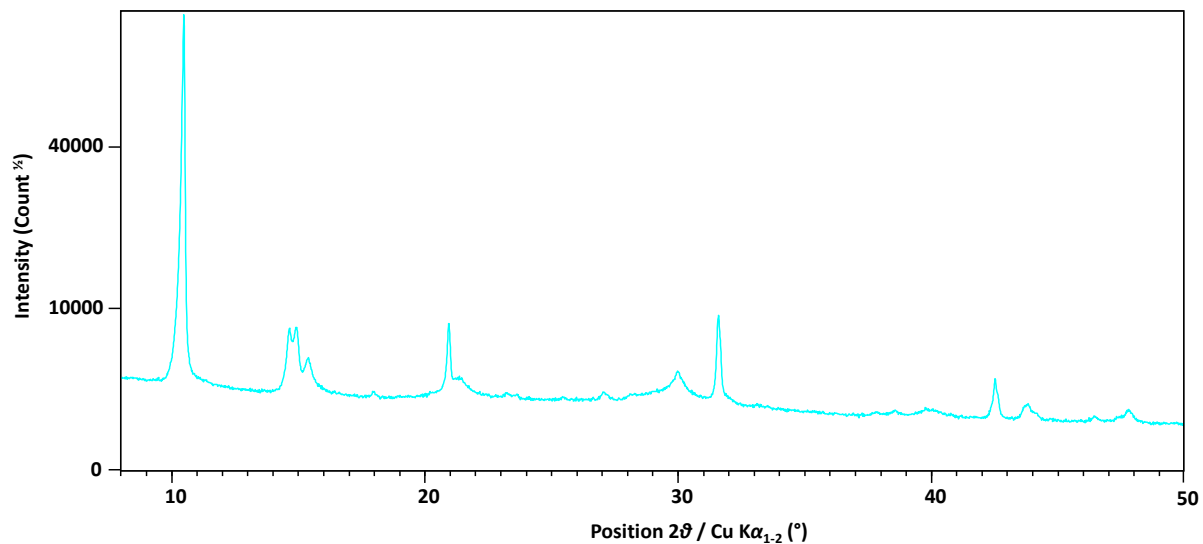


Figure S13. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 13

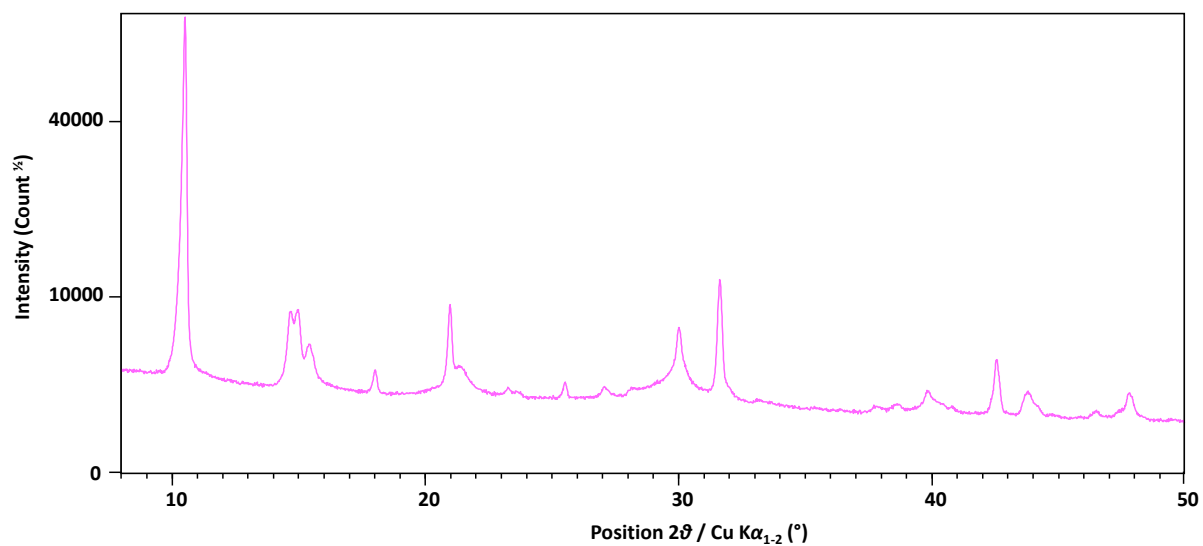


Figure S14. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 14

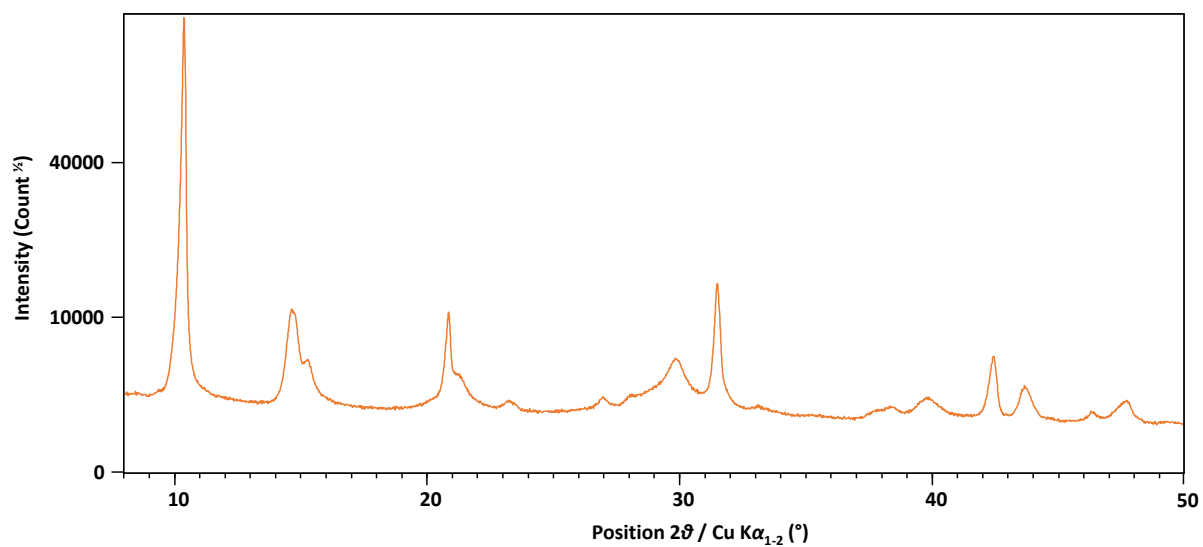


Figure S15. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 15

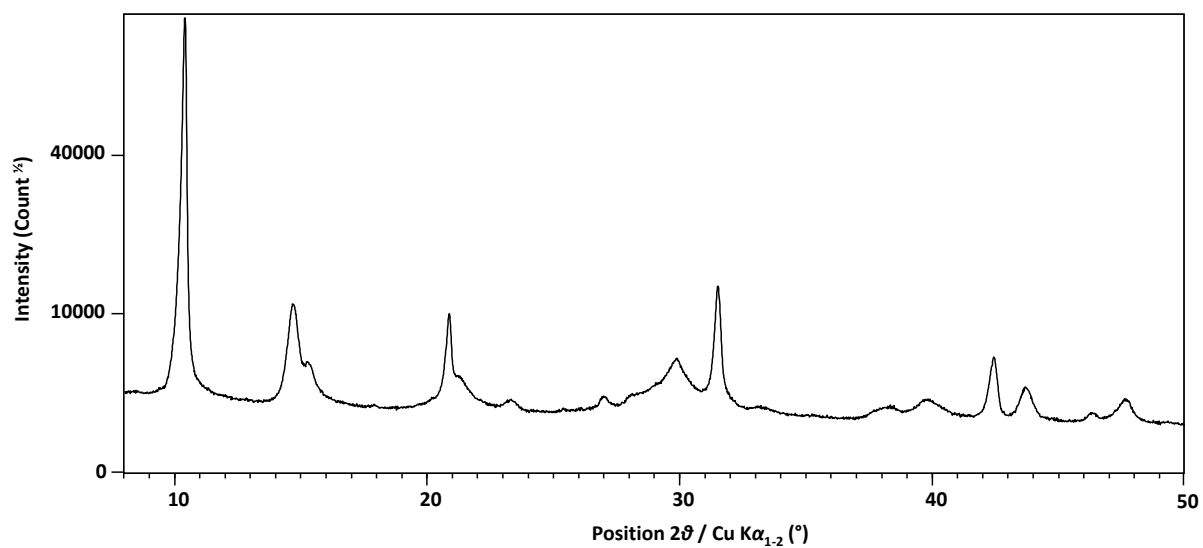


Figure S16. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 16



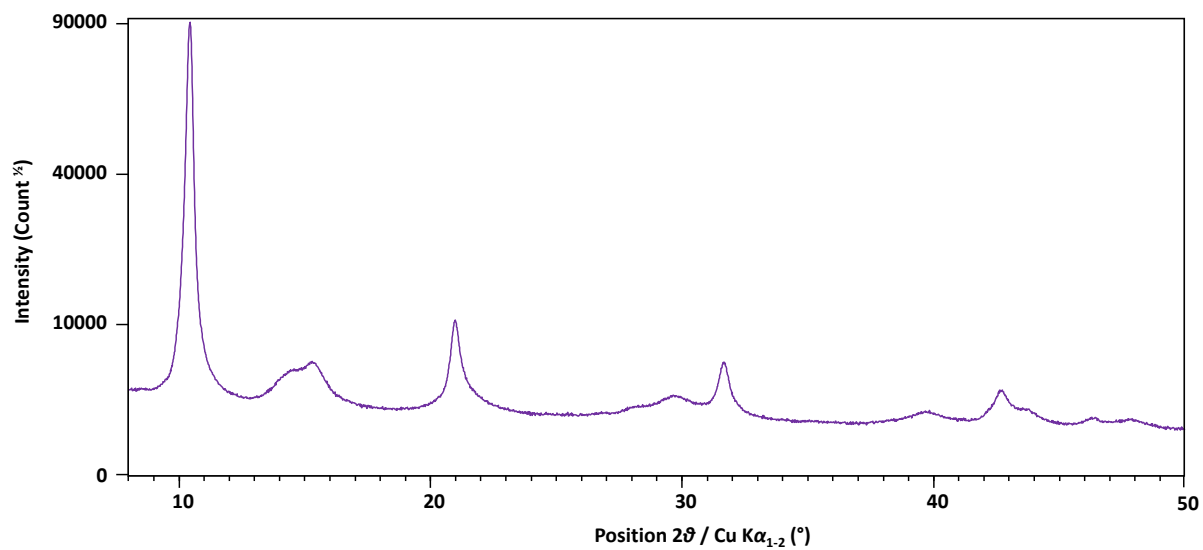


Figure S17. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 17

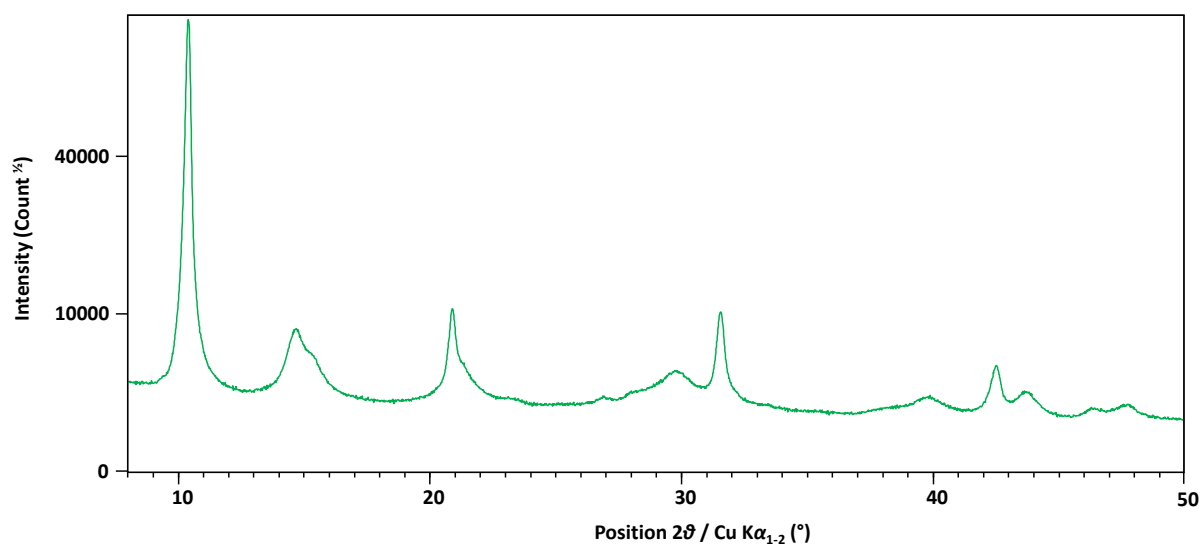


Figure S18. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of Sample 18

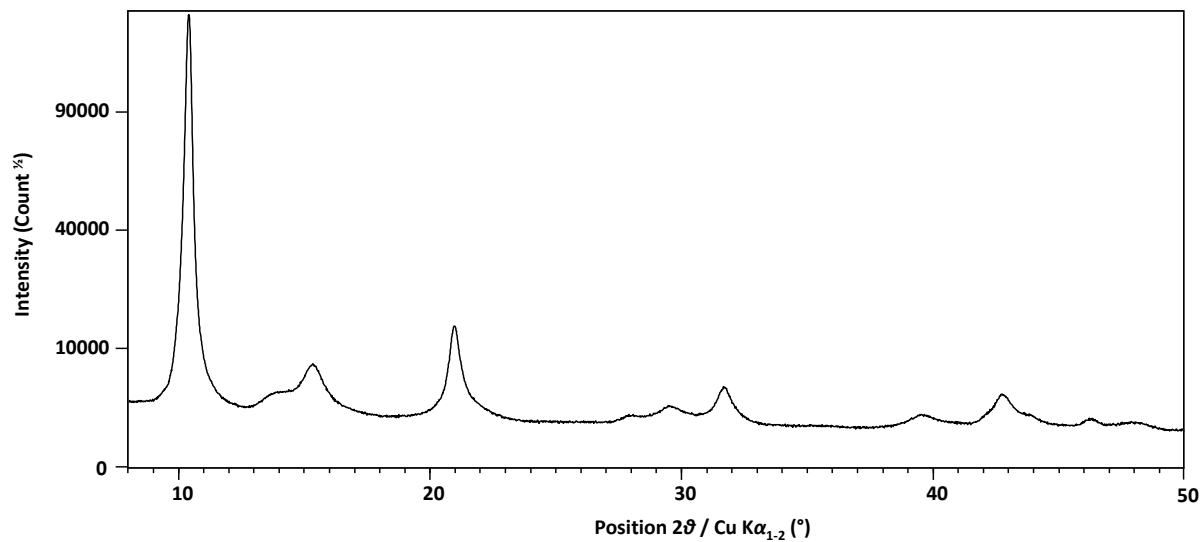


Figure S19. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of the 10-factor scale-up sample (Trial 1)

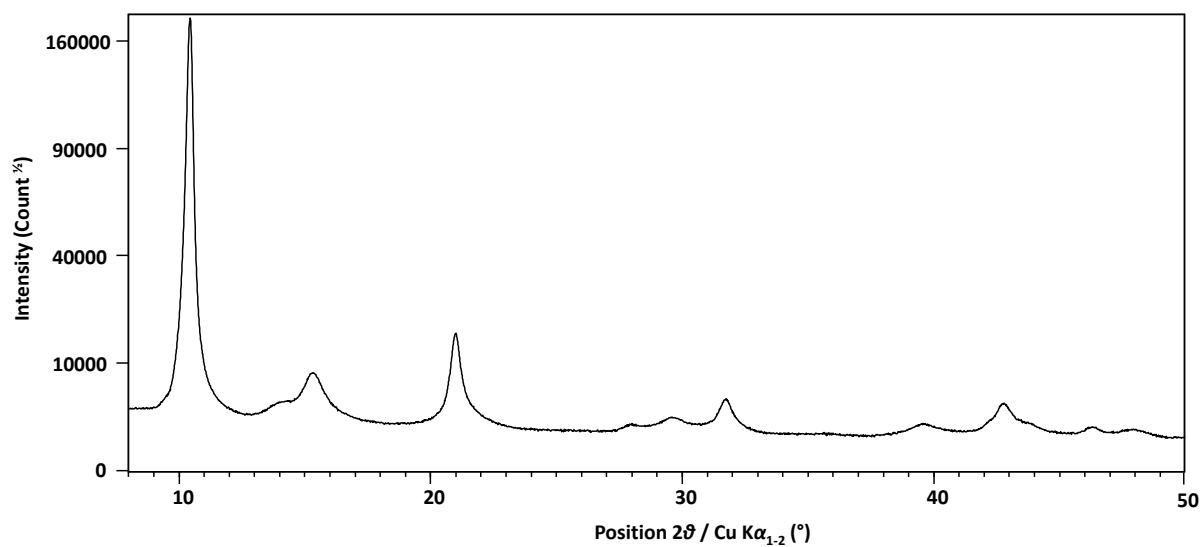


Figure S20. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of the 10-factor scale-up sample (Trial 2)

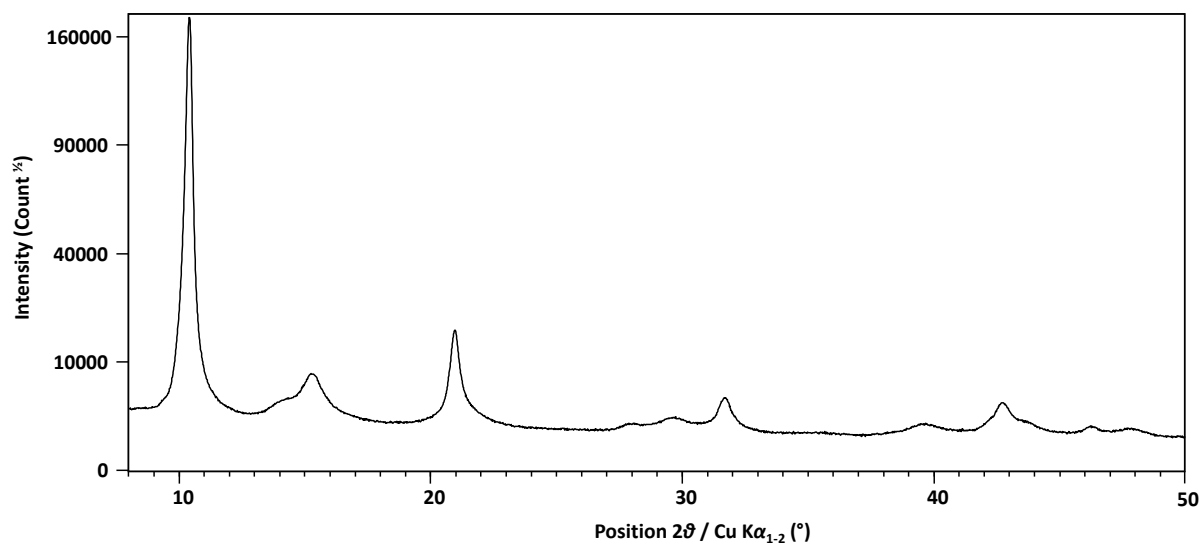


Figure S21. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of the 10-factor scale-up sample (Trial 3)

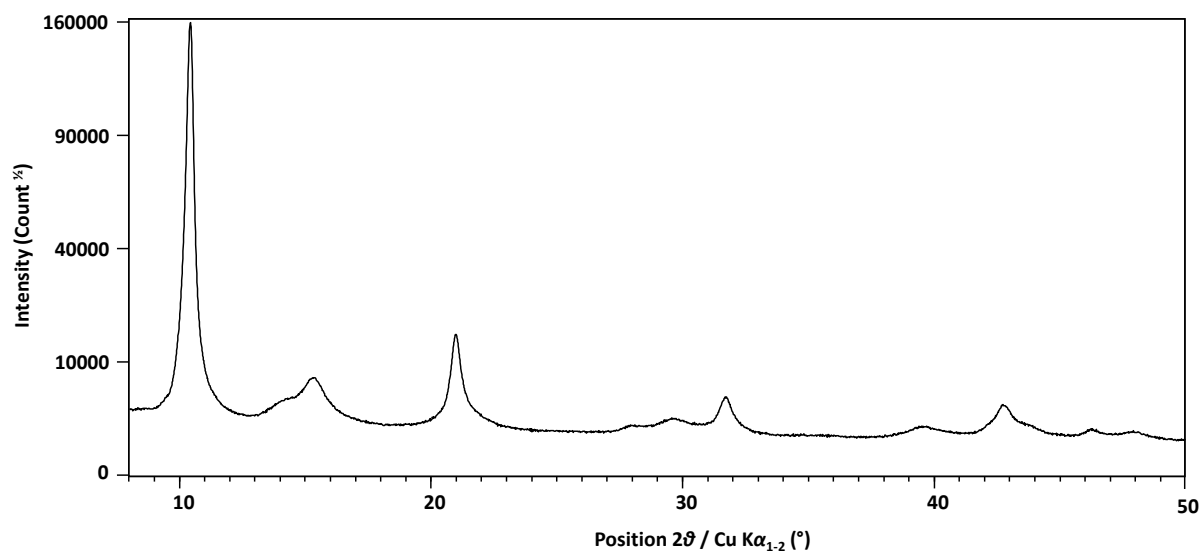


Figure S22. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of the 10-factor scale-up sample (Trial 4)

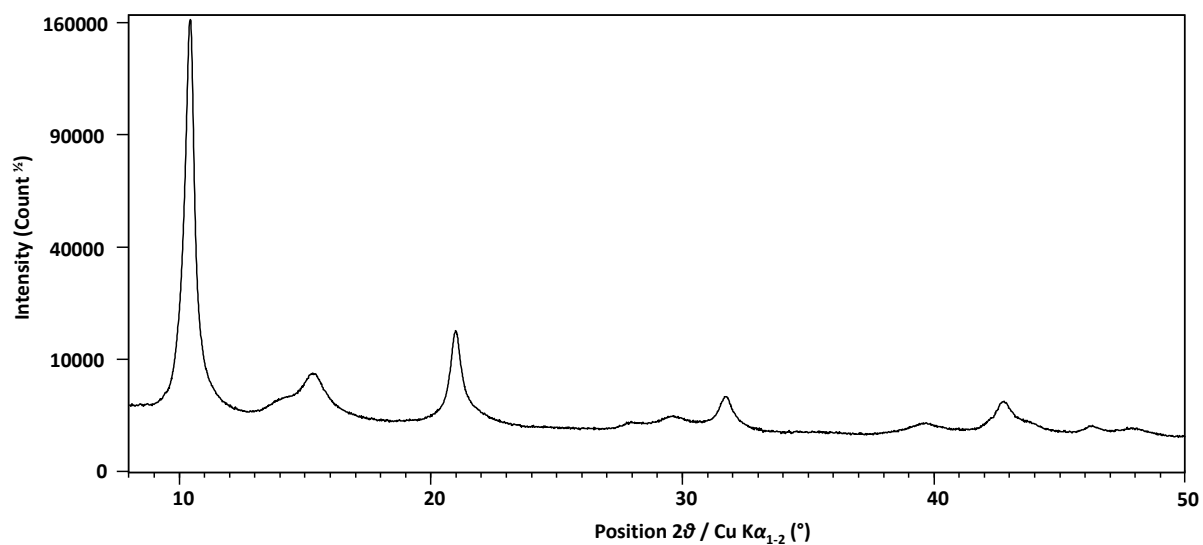


Figure S23. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of the 10-factor scale-up sample (Trial 5)

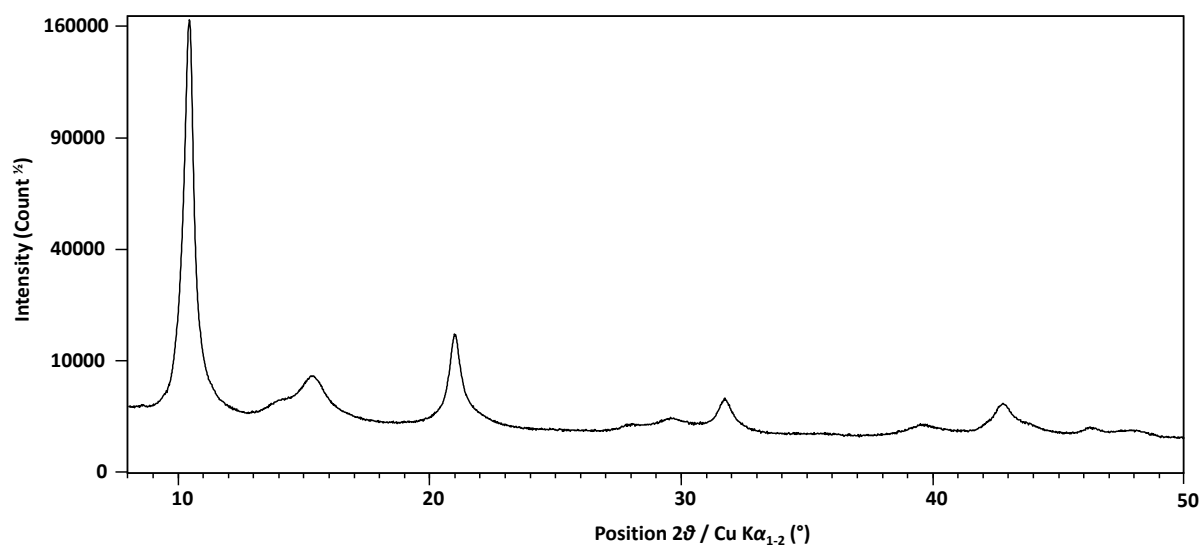


Figure S24. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of the 10-factor scale-up sample (Trial 6)

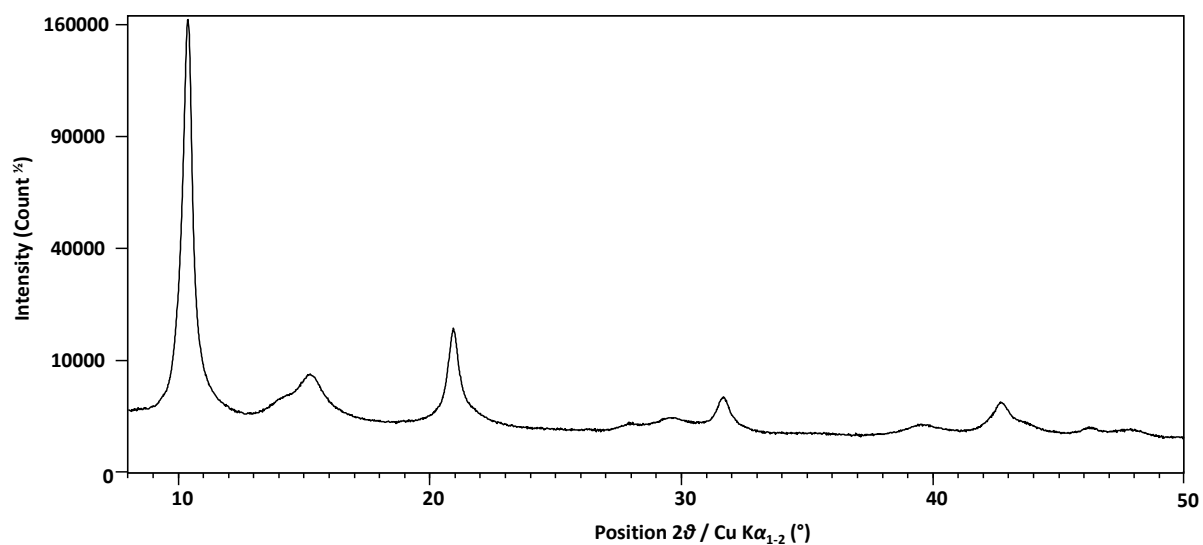


Figure S25. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of the 10-factor scale-up sample (Trial 7)

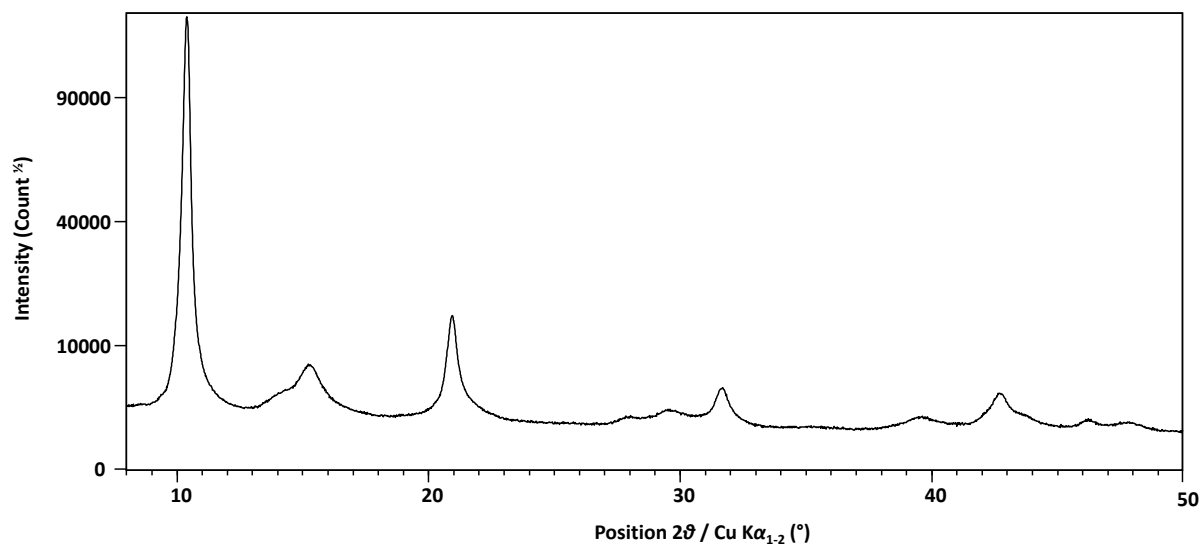


Figure S26. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of the 10-factor scale-up sample (Trial 8)

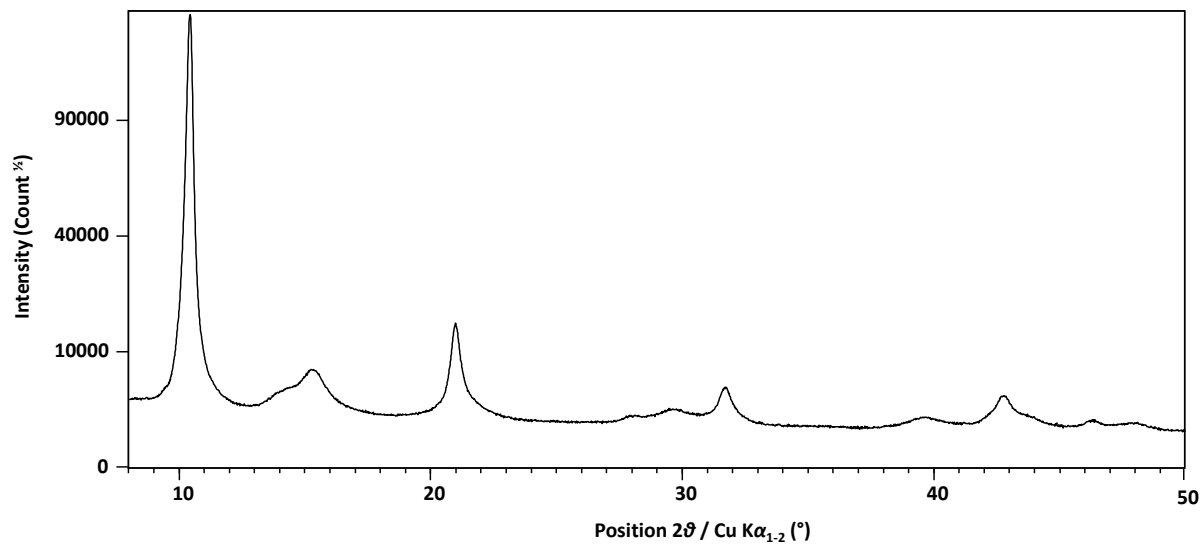


Figure S27. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of the 10-factor scale-up sample (Trial 9)

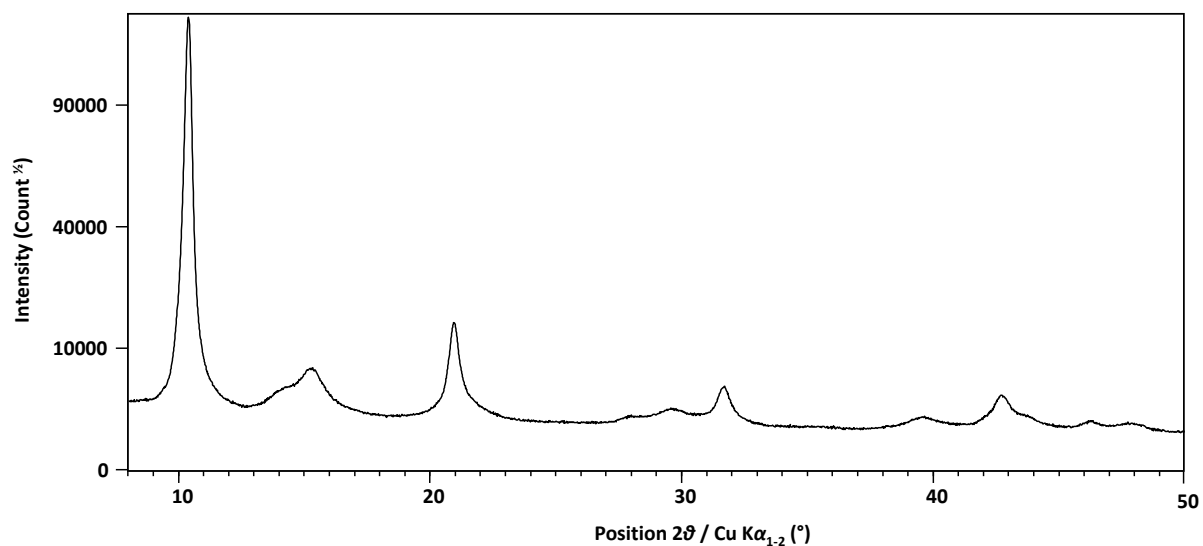


Figure S28. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of the 10-factor scale-up sample (Trial 10)

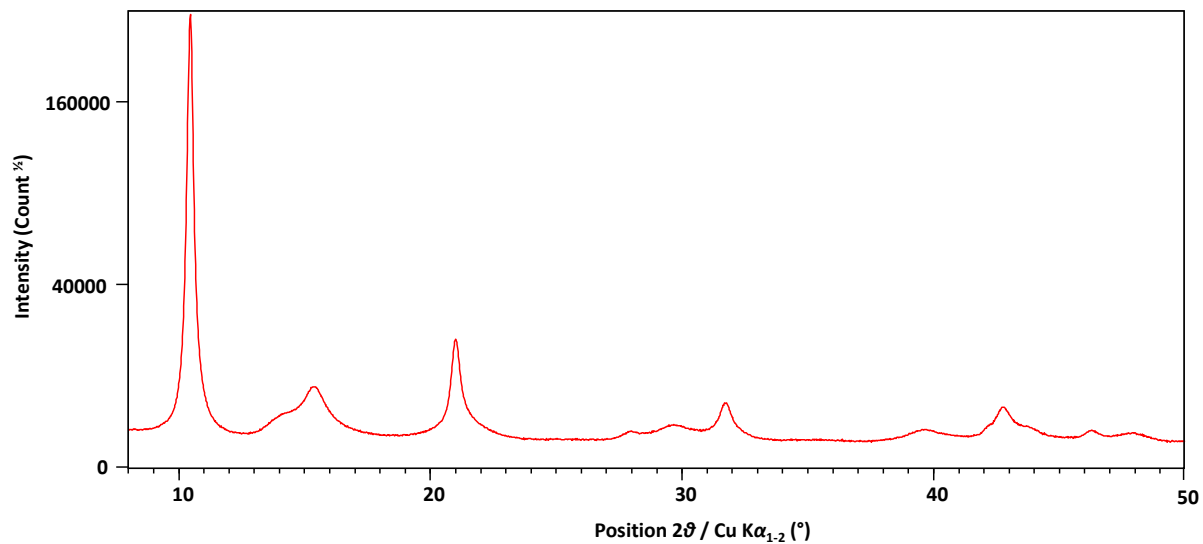


Figure S29. XRD patterns at wide  $2\theta$  angles (Cu  $K\alpha$  radiation) of the 100-factor scale-up sample