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Supporting Information for

Developing a sustainable route to environmentally relevant metal-organic frameworks: ultra-rapid synthesis of MFM-300(Al) using microwave heating

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Starting from the conventional solvothermal route,[1-3] a reproducible microwave-assisted synthetic procedure to MFM-300(Al) was developed. The aims of developing the new route were to reduce the reaction time, negate the requirement for additional chemicals (piperazine and nitric acid), and to minimise the amount of unwanted side products (*i.e.* γ-Al(O)OH) and unreacted starting materials. A summary of the method development steps is given in **Table S1** below.

Table S1. Summary of method development for a microwave-assisted route to MFM-300(Al). All reactions performed in deionised water without piperazine or nitric acid.

Synthetic modification	Aluminium chloride source	Reactant ratio Aluminium: H_4BPTC	Reaction time (minutes)	Synthetic outcome
1	Anhydrous	2:1	120	γ-Al(O)OH produced.
2	Anhydrous	2:1	30	γ-Al(O)OH produced.
3	Hexahydrate	2:1	10	Unreacted linker, *ca.* 5.4 – 10.4% from TGA.
4*	Hexahydrate	4:1	10	Unreacted linker present in PXRD pattern but none detected by TGA.
5	Hexahydrate	> 4:1	10	High intensity peak corresponding to unreacted linker in PXRD pattern.

*Desired synthetic outcome achieved; results presented in main paper.

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