Comment on "The solvent and zinc source dual-induced synthesis of a two dimensional zeolitic imidazolate framework with a farfalle-shape and its crystal transformation to zeolitic imidazolate framework-8" by C.-X. Jin et al., 2020, 49, 2437.

-Supporting Information-

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Experimental details and analysis methods:

ATR-FTIR. Infrared spectra were measured with a JASCO 4100 IR spectrometer equipped with a PIKE GladiATR unit in a range between 400 and 4000 cm^{-1} with a resolution of 2 cm^{-1}. Each spectrum is an accumulation of 16 scans.

SEM. Scanning electron microscopy measurements were carried out with a Carl-Zeiss Gemini Ultra 55, were an acceleration voltage of 1 kV and a working distance of 5 mm was used.

X-ray powder diffraction. XRPD patterns were collected with a Panalytical Empyrean diffractometer ($\lambda_{CuK\alpha}$ = 1.5406 Å, β-Ni filter) with a spinner setup in a range of 2θ = 2 ° to 50 ° with a step size of 0.02 ° and an exposure time of 5 seconds per step.

Synthesis.

Zinc acetate dihydrate (99.5 %) was purchased from Fluka, zinc nitrate hexahydrate (98 %) from Honeywell and 2-methylimidazole (99 %) from MERCK. All chemicals were used without further purification. Each synthesis is conducted by dissolving the zinc salt and 2-methylimidazole separately each in half of the correspondent amount of water, combined and stirred for several hours at room temperature, until a precipitate is formed. For example, for the molar ratio of 1:4:2000 548.5 mg zinc acetate (2.5 mmol) and 821 mg of methylimidazole were each dissolved in 45 ml of water (2.5 mol) and combined. After 12 hours the mixture was centrifuged at 8000 rpm for eight minutes. The resulting solid was dried at 60 °C over night.

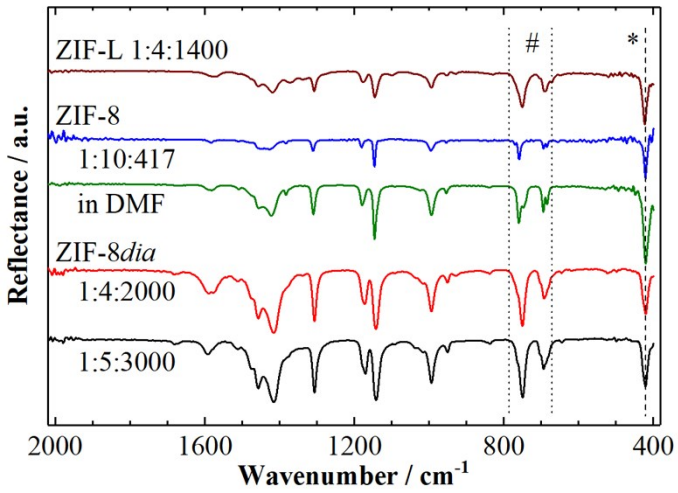

Figure S 1 ATR-FTIR spectra of ZIF-L, ZIF-8dia and ZIF-8. The numbers represent the molar ratios of zinc salt, methylimidazole and water. For the ZIF-L, ZIF-8 in DMF and ZIF-8*dia* (1:5:3000) zinc nitrate was used, whereas for the others (ZIF-8 at 1:10:417 and ZIF-8*dia* at 1:4:2000 the zinc source was zinc acetate.

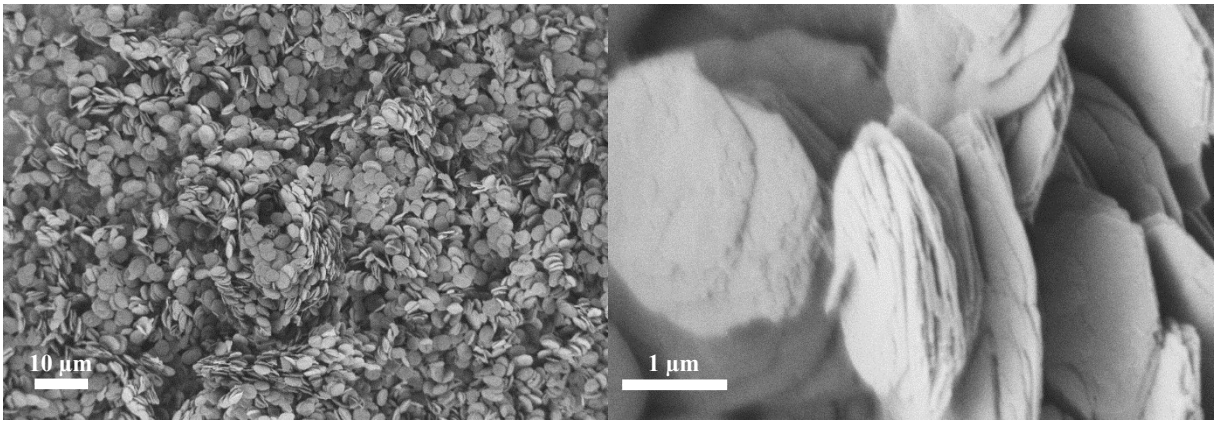

Figure S 2. SEM Pictures of ZIF-8*dia* synthesised with zinc nitrate hexahydrate with a molar ratio of 1:5:3000 at different magnifications.

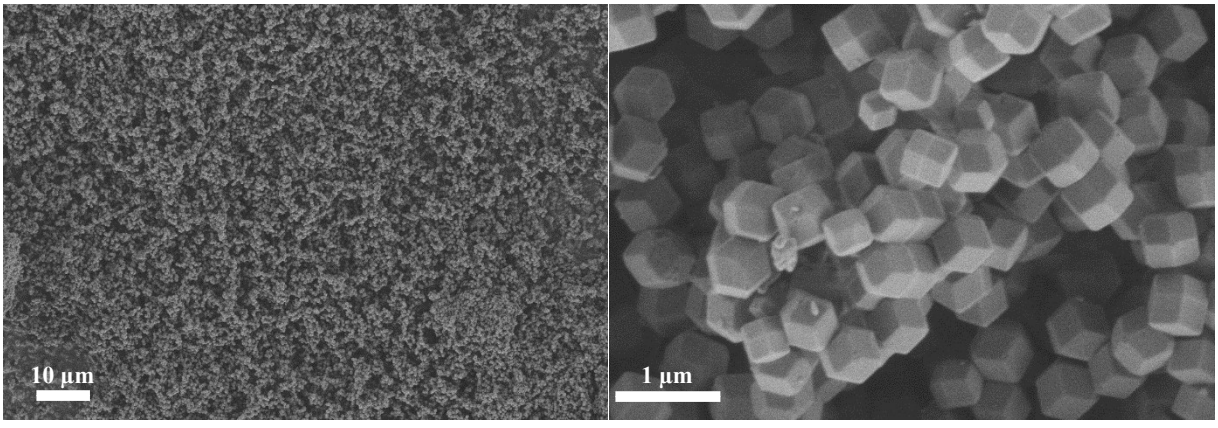

Figure S 3 SEM Pictures of ZIF-8 synthesised with zinc acetate dihydrate with a molar ratio of 1:10:419 at different magnifications.

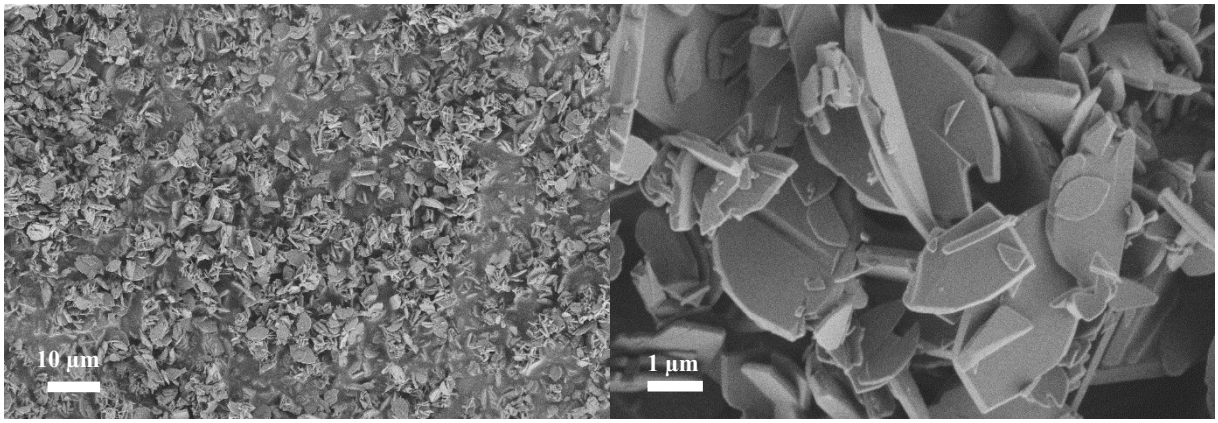

Figure S 4 SEM Pictures of ZIF-L synthesised with zinc nitrate hexahydrate with a molar ratio of 1:4:400 at different magnifications.

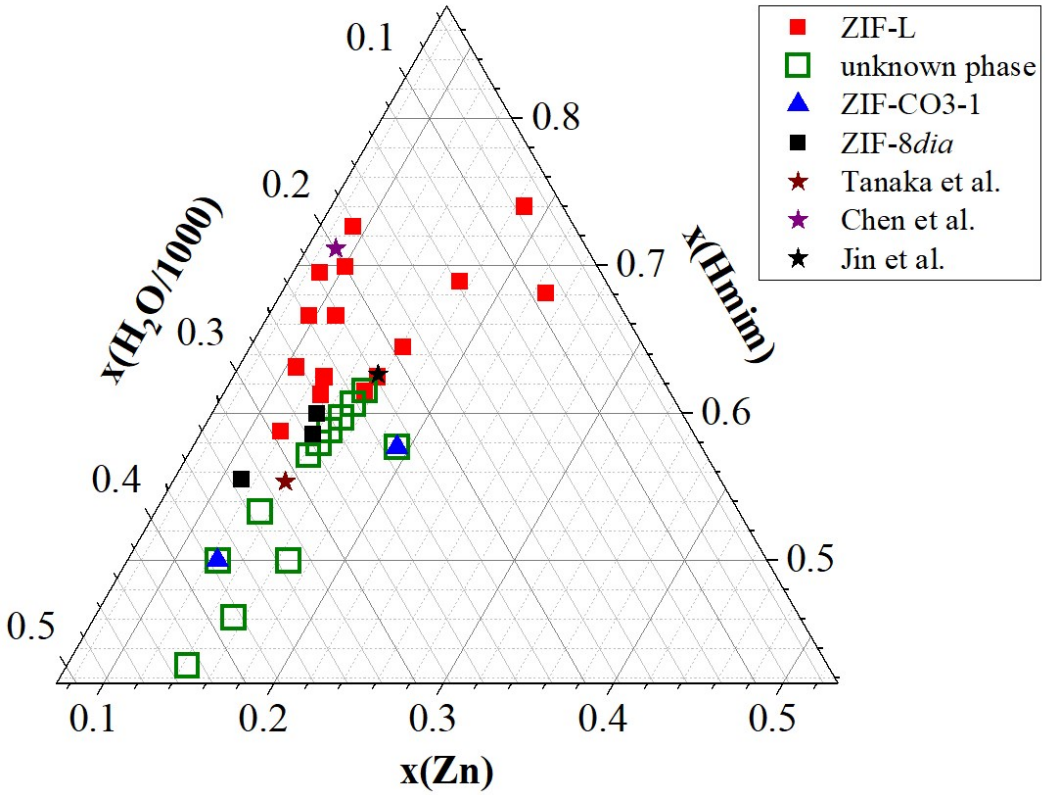

Figure S 5 Phase diagram for the products of zinc nitrate and methylimidazole in a different view than figure 3 in the main comment. To align the axes to meaningful relations the molar amount of water was divided by 1000. For the formation of ZIF-L a high amount of Hmim is needed, while the necessary amount of water is low. More water and less Hmim leads to the formation of an unknown phase. Since the ratio between zinc and methylimidazole is always chosen to be smaller than 1:2 no data points are obtained on the right bottom side of the triangle.