

Electronic Supplementary Information

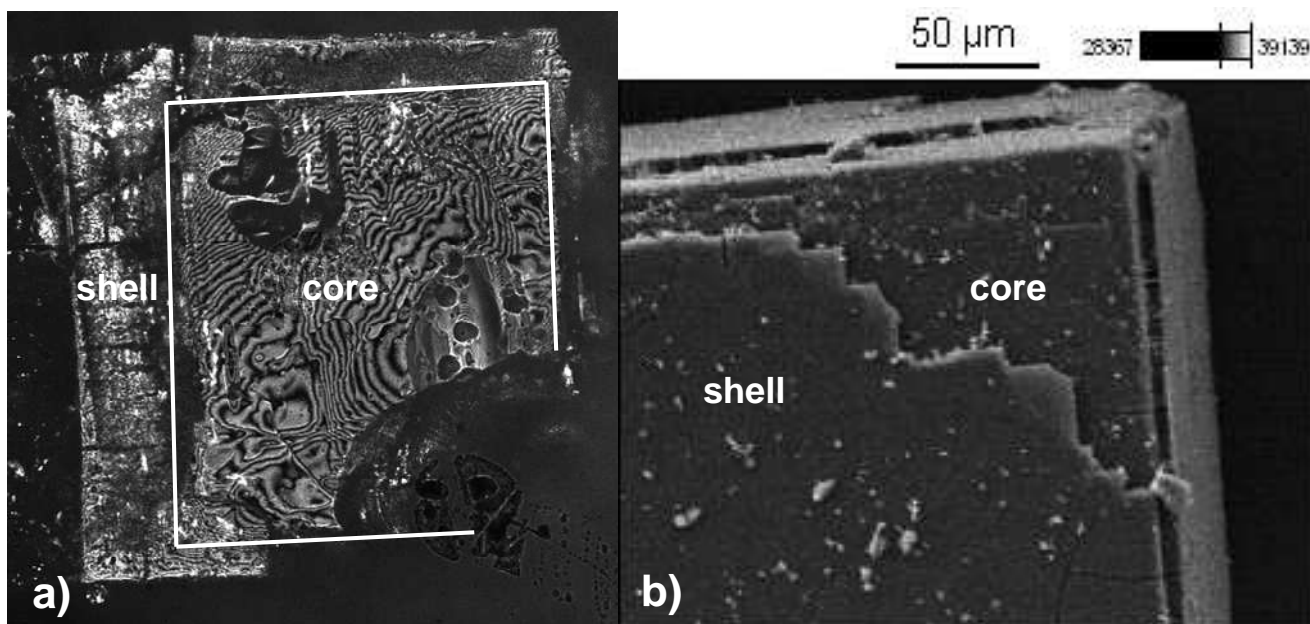


Figure S1 a) Confocal-laser scan microscope image and b) SEM image of a IRMOF-2@MOF-5 Janus particle

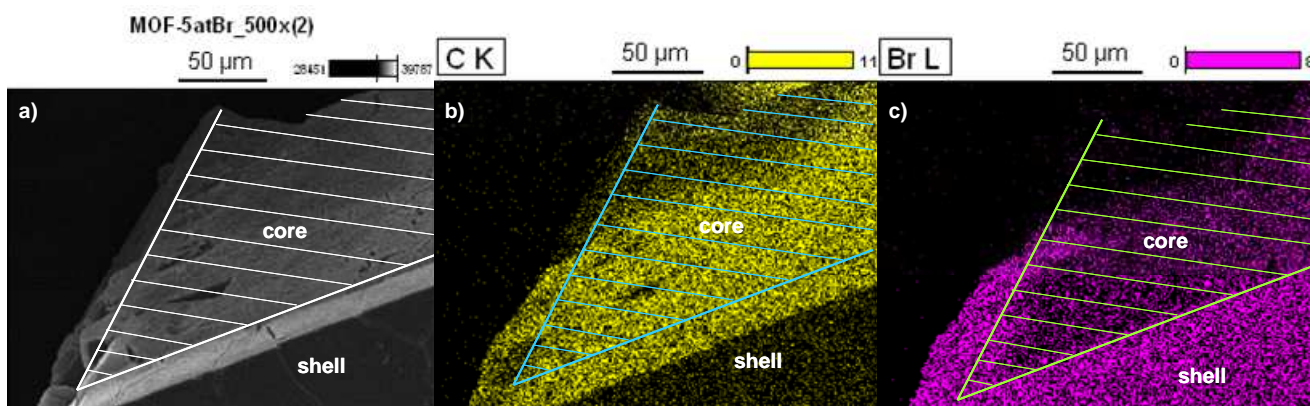
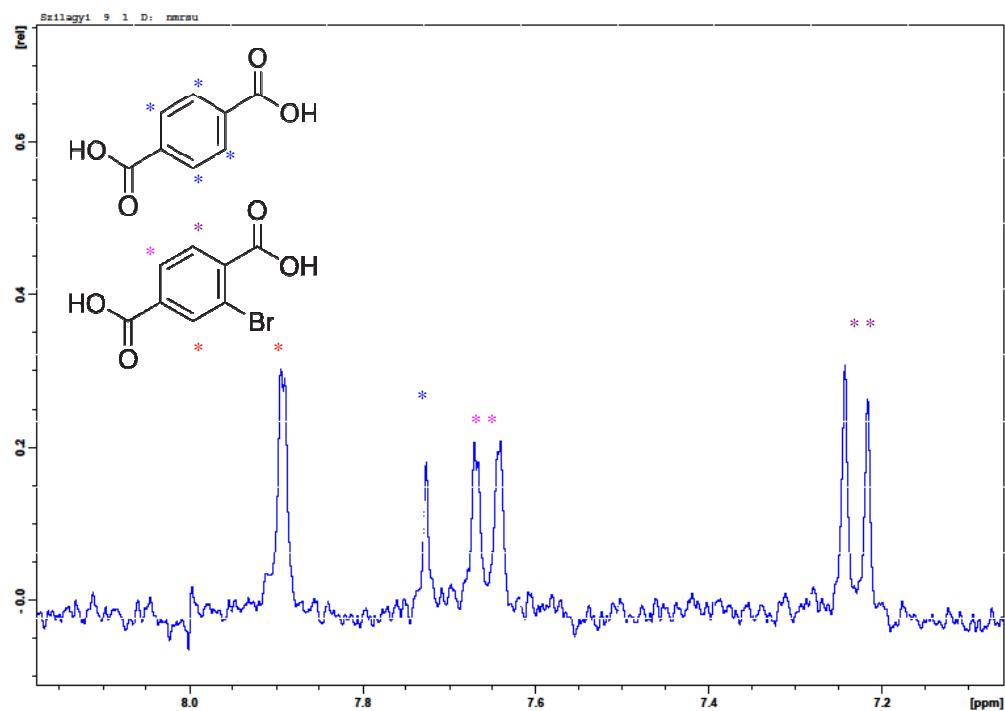
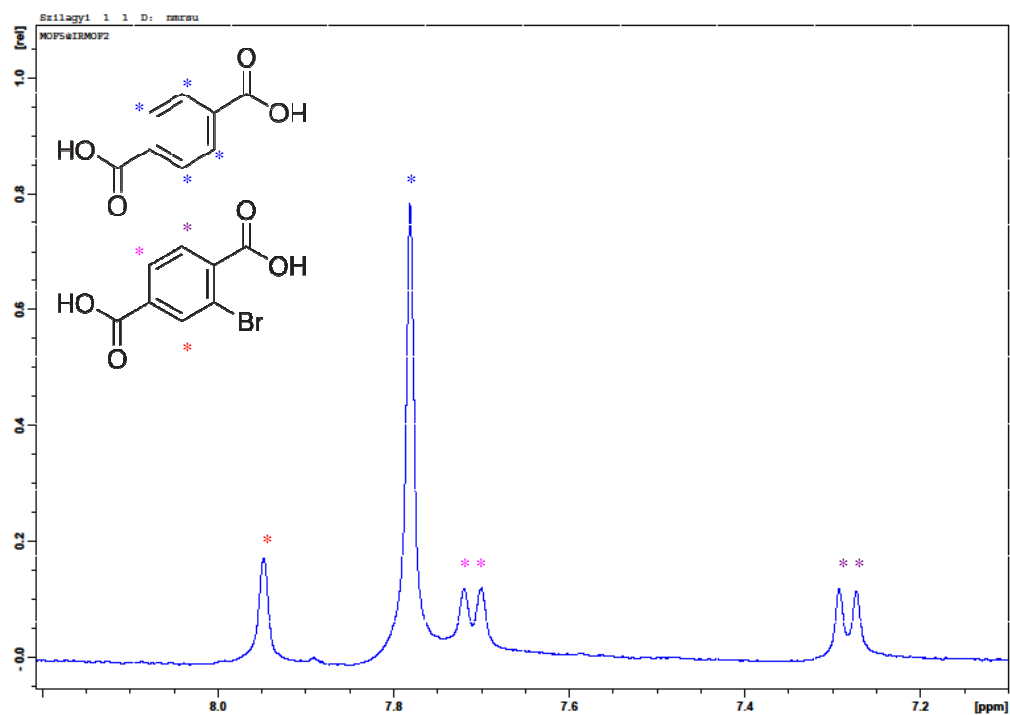
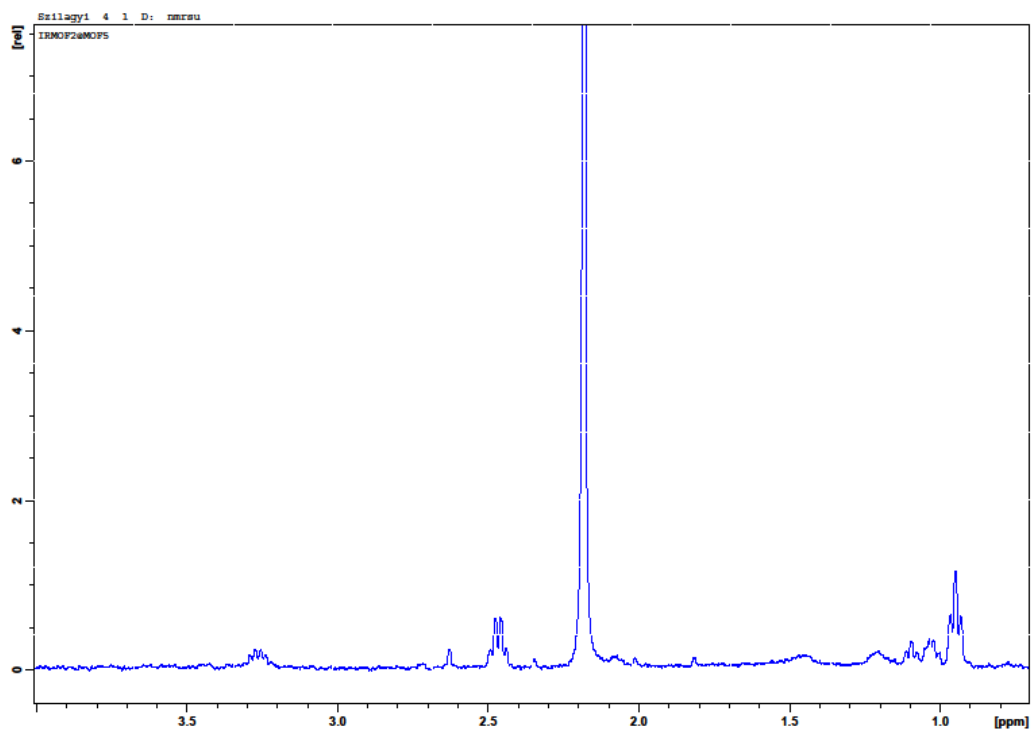
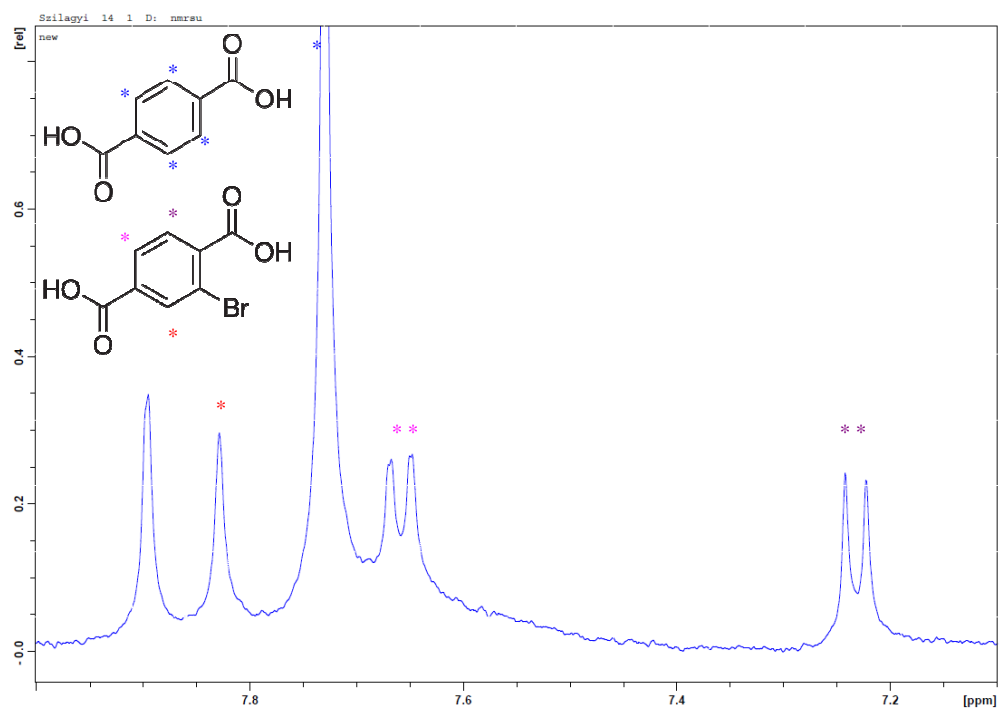


Figure S2 a) SEM image of an IRMOF-2@MOF-5 Janus particle with the uncoated core crystal face up (ruled in white), showing the core-shell boundary in white lines on the sides and the EDX elemental mapping of the same particle displaying b) the carbon and c) the bromine distribution within the particle. The Br distribution image clearly shows that the Br-free MOF-5 forms the shell, and the Br-containing IRMOF-2 is the core of the particle.





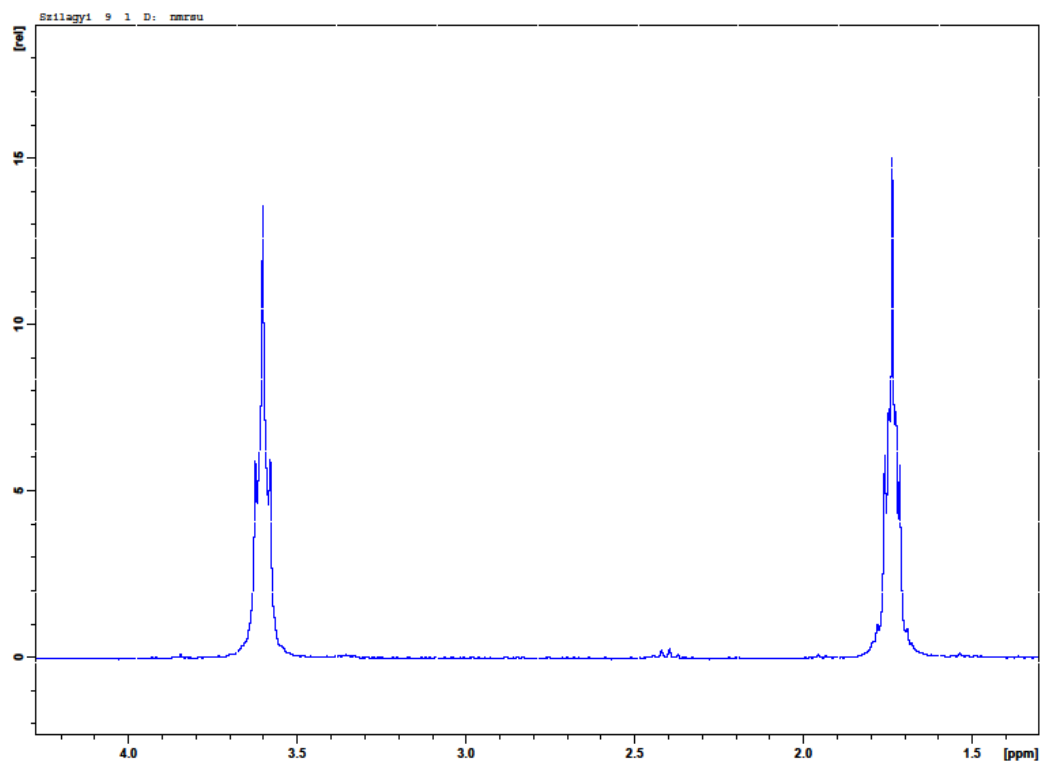


Figure S3 ^1H NMR spectra of the digested MOF samples: Ar-H: MOF-5@IRMOF-2 Janus particles, IRMOF-2@MOF-5 Janus particles and core-shell particles and solvent protons for the as-synthesized core-shell particles after activation and solvent-exchanged (to THF) core-shell particles after activation

Table S1 Linker ratios in MOF@MOF particles as determined from the ^1H NMR spectra of the digested samples

Component ratio	MOF-5	IRMOF-2
Janus particles MOF-5@IRMOF-2	3.7	1.0
Janus particles IRMOF-2@MOF-5	1.0	2.6
Core-shell IRMOF-2@MOF-5	1.0	1.0