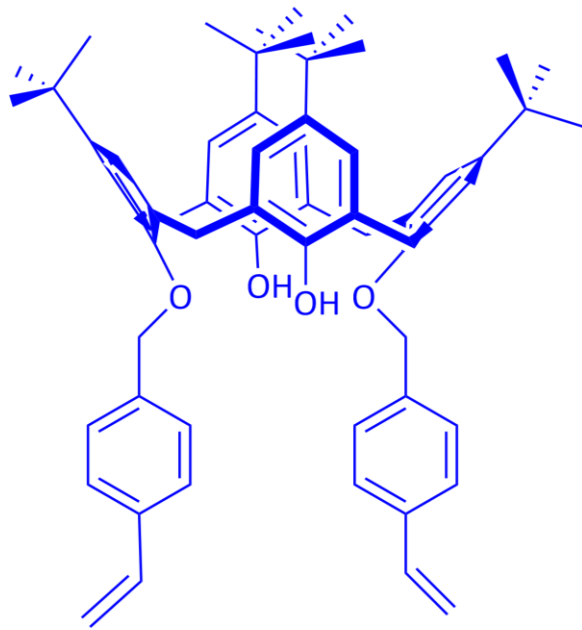




Towards Greener Mechanochemistry of Functional Calixarenes

Clara Silveiro, Vasco D.B. Bonifácio, José V. Prata,
Alexandra I. Costa, Patrícia D. Barata

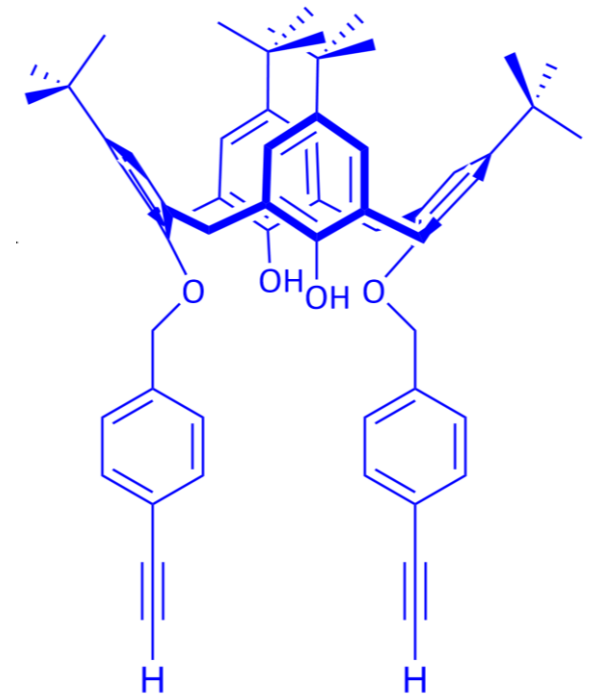
✓ Advanced calix[4]arenes were synthesised by mechanochemistry under solventless conditions.



Planetary Ball Mill



Zirconium oxide jar



✓ Vinyl and ethynyl calixarene monomers were synthesised with reduced reaction times up to 58%

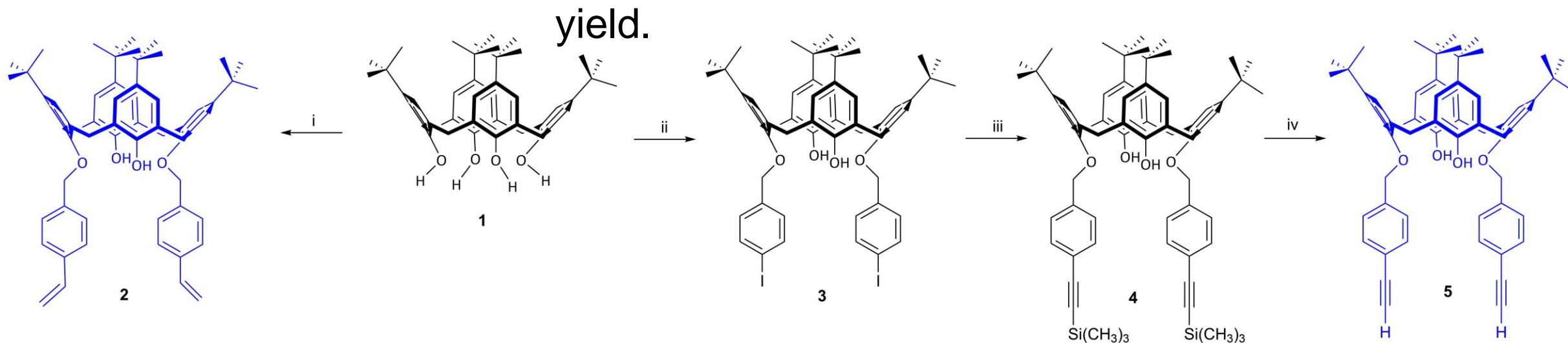


Table 1. Comparison between conventional and mechanochemical-assisted synthesis of functional calix[4]arenes.

Calixarene	Conventional Synthesis			Mechanosynthesis	
	Yield (%)	Time (h)	Solvent	Yield (%)	Time (h)
2	48.0	168	ACN ¹	10.0	60
3	81.1	24	ACN ¹	27.2	7
4	36.9	24	THF ¹	68.1	8
5	49.1	0.5	THF ²	58.2	0.25

¹ Refluxing conditions. ² Reaction at room temperature. ACN= acetonitrile, THF= tetrahydrofuran.

