Title (3)	:	**Dry Desulphurisation of Gas Streams Using KCC-1 Mesoporous Silica Functionalised with Deep Eutectic Solvents**
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Abstract	:	Sulphur dioxide, a toxic gas pollutant, is mainly generated by the combustion of fossil fuels and the smelting of sulphur-bearing mineral ores. Removal of SO2 gas or desulphurisation can be accomplished in industries using a variety of processes; the most efficient is wet flue gas desulphurisation (FGD). However, wet FGD has challenges, such as the requirement for wastewater treatment, excessive water usage, and the necessity for chloride protective coating. Despite having a lesser adsorption capacity than wet FGD, dry FGD can efficiently remove SO2 from the effluent gas stream and avoid the issues associated with wet FGD, provided that the sorbents are modified and regenerable. An alternative dry desulphurisation strategy by using fibrous mesoporous silica (KCC-1) modified with deep eutectic solvents (DES), choline chloride–glycerol (DES1) and choline chloride–ethylene glycol (DES2) is studied in this paper. KCC-1 modified with DES1 is found to increase SO2 adsorption capacity to 4.83 mg g−1, which is 1.73 times greater than unmodified KCC-1 and twice higher than KCC-1 modified with DES2 attributed to the sorbent's high porosity. Increasing reaction temperature and SO2 concentration reduce the adsorption capacity to 1.73 mg g−1 and 2.73 mg g−1, respectively.