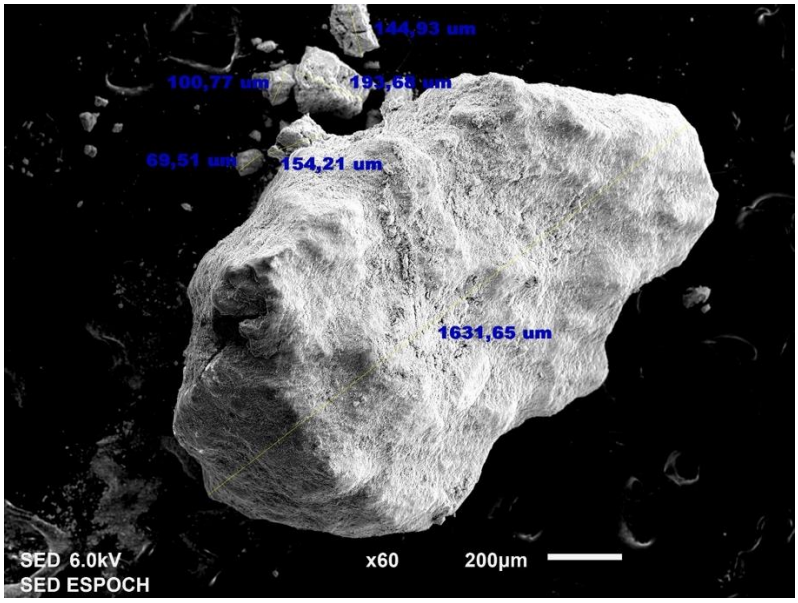


Figure S1. Natural Zeolite micrograph and measurements of grains.

In Figure.S1, several grains of natural zeolite are shown. The mesh size of the natural zeolite is approximately 14×40, indicating that the grain particles range from 420 µm to 1200 µm in general of total population. For the SEM analysis we take some grains in different particles size, specially that smallest, it demonstrates that some particles fall within a broader range of 69.51 µm to 1631.65 µm. It is worth noting that some grains exhibit a compact and well-defined structure. Despite the micrograph covering a scale of 200 µm, the 3D morphology of the grains remains evident.

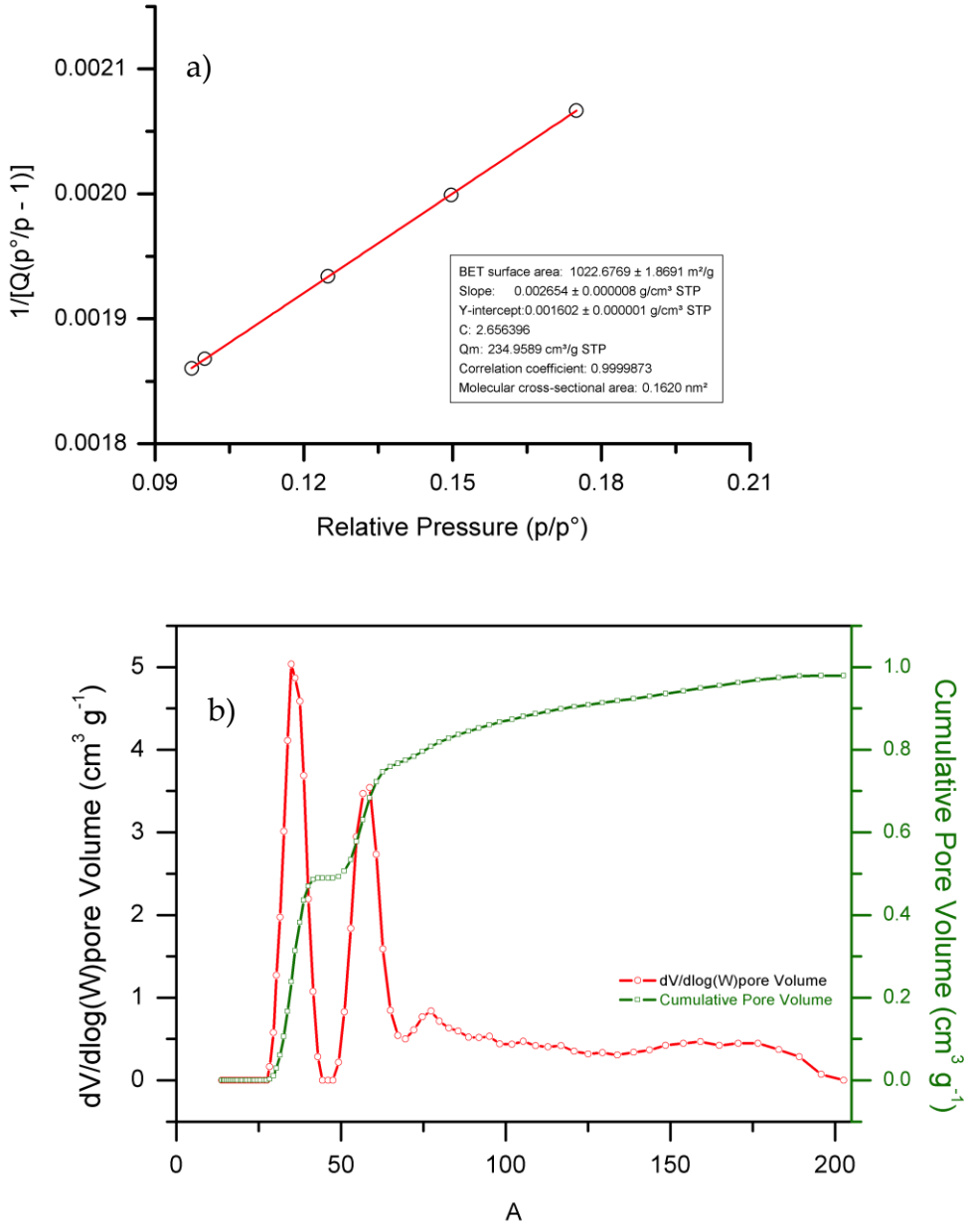


Figure S2. a) BET surface area plot of ZGO10, b) Pore size distribution of ZGO10.

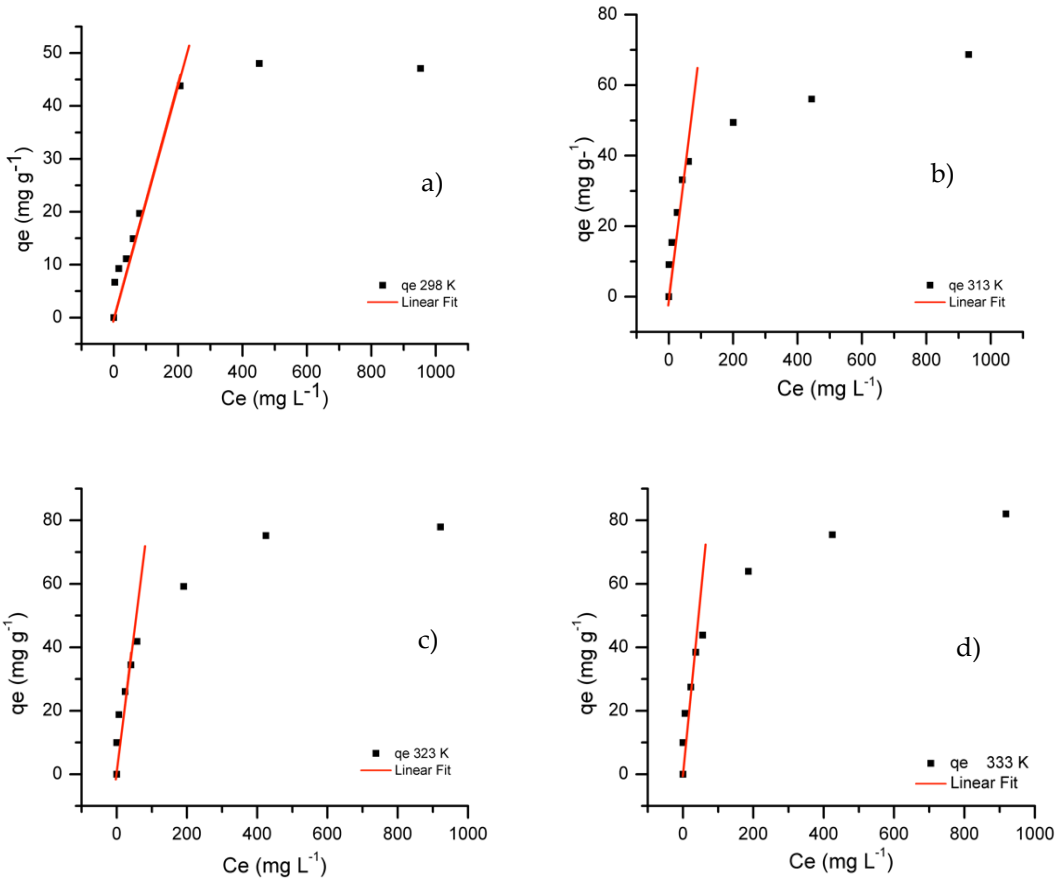


Figure S3. Linear fit of adsorption isotherm data section a) 298 K, b) 313 K, c) 323 K and d) 333 K

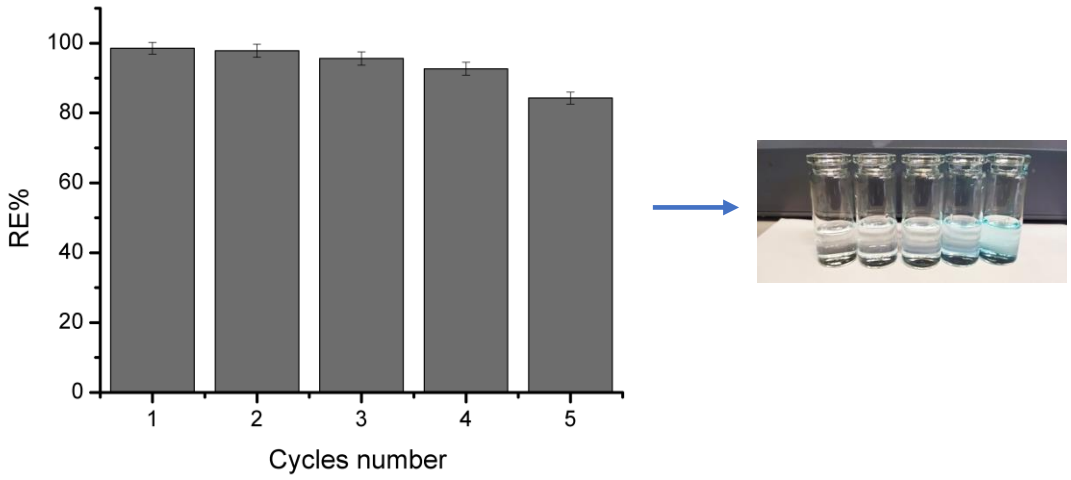


Figure S4. Reusability study of 10 mg of ZG10 in 10 mL of MB solution (10 mg mL^{-1}), using 10 mL of 0.1 N HCl as the desorption liquid at 298 K for 3 hours.