

Supplementary Materials (SM)

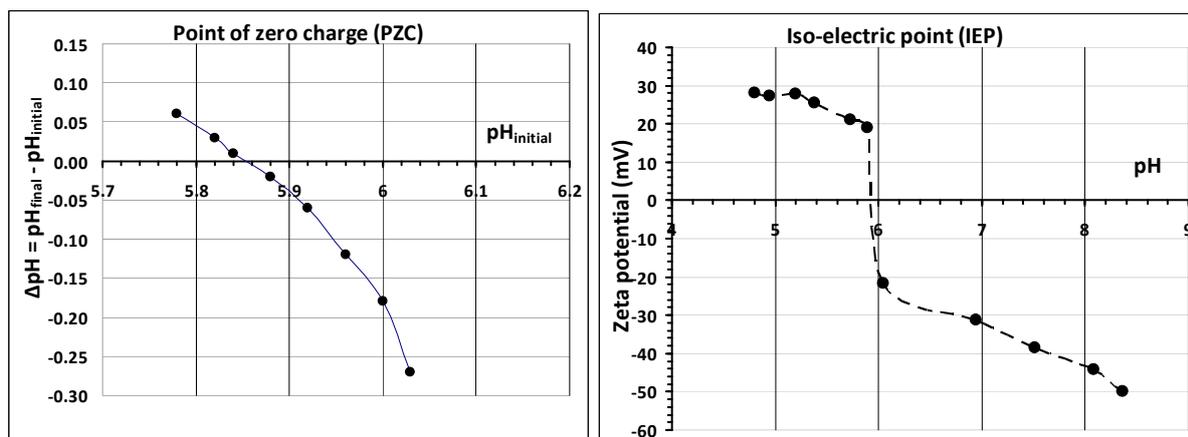


Figure S1: “ ΔpH ” variations versus “initial pH” for the determination of the pH at the point of zero charge of alkali brick by means of the salt-addition method. “Zeta potential” versus “suspension pH” for the determination of the pH at the iso-electric point of alkali brick by zetametry.

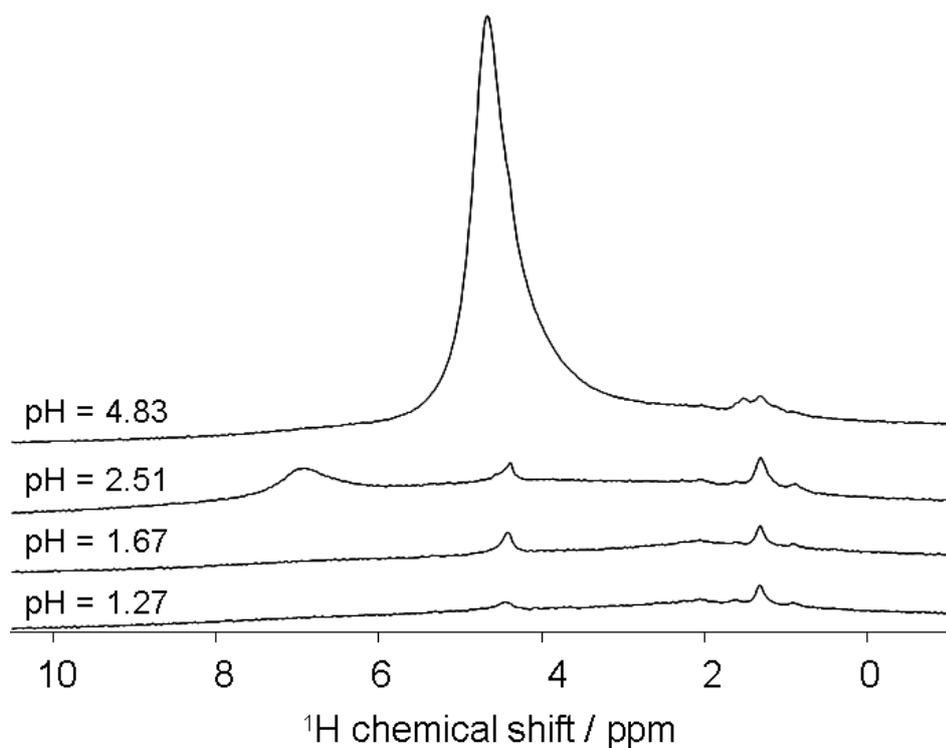


Figure S2(^1H): ^1H MAS NMR spectra of alkali-brick grains after their acidification at different pH values ranging from 4.83 to 1.27.

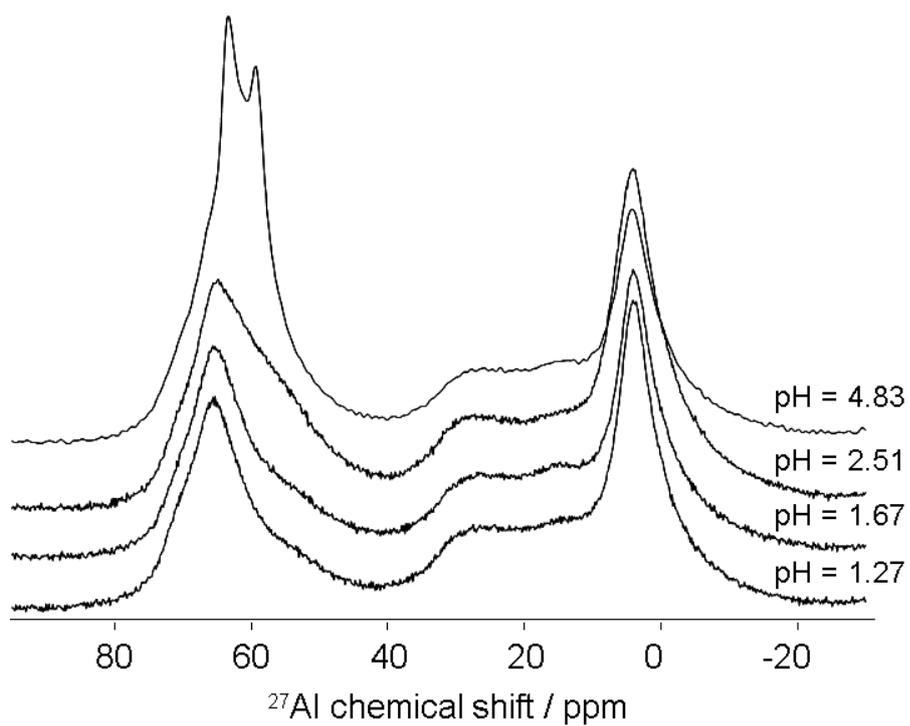


Figure S2(^{27}Al): ^{27}Al MAS NMR spectra of alkali-brick grains after their acidification at different pH values ranging from 4.83 to 1.27.

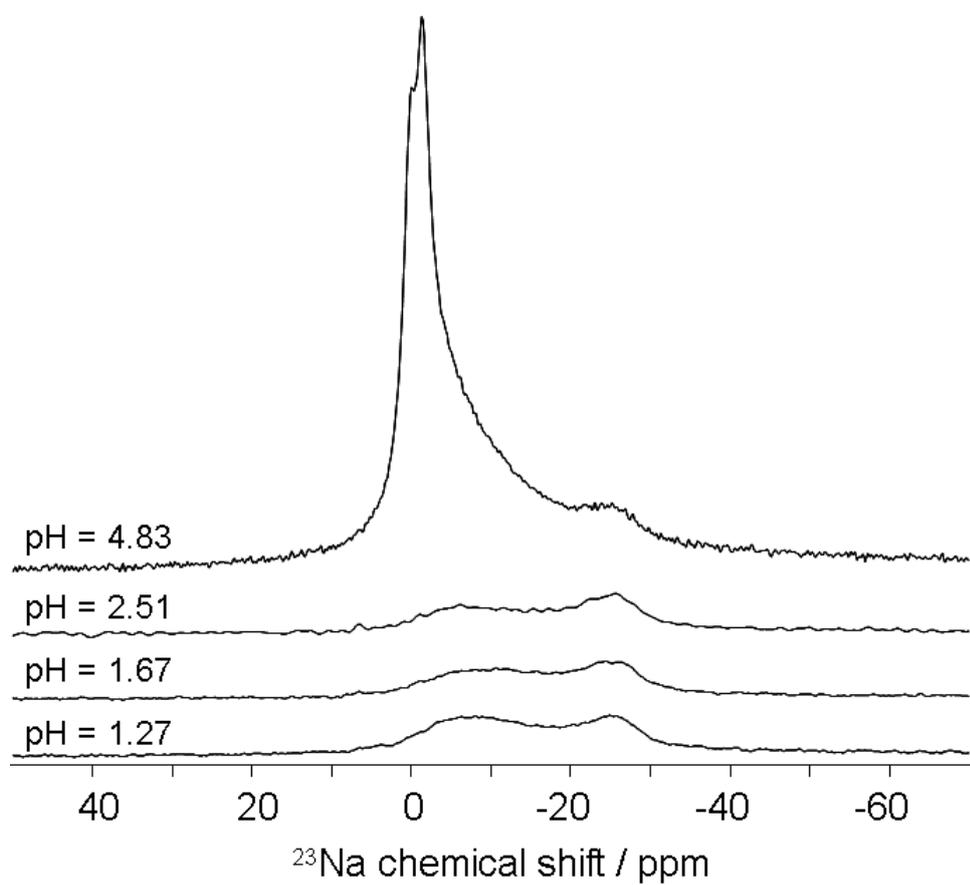
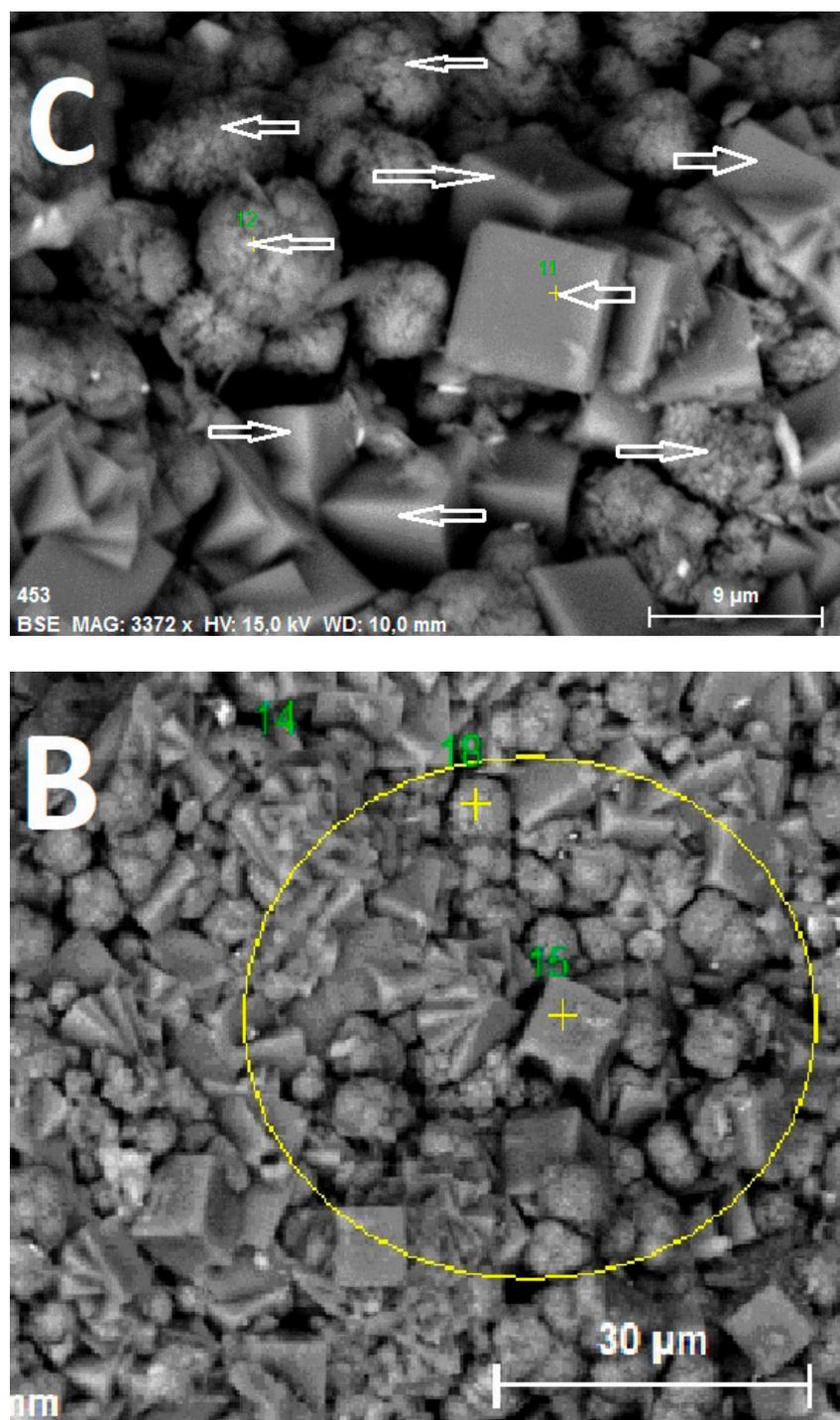


Figure S2(^{23}Na): ^{23}Na MAS NMR spectra of alkali-brick grains after their acidification at different pH values ranging from 4.83 to 1.27.



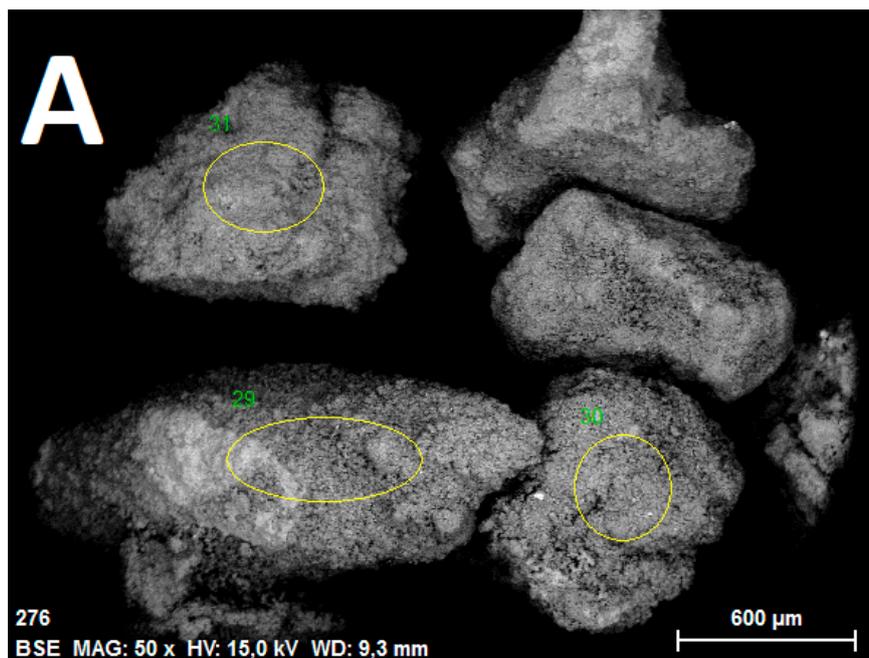


Figure S3: ESEM images of alkali-brick grains. Quantitative ESEM/EDS analyses performed on: large zones of surface aggregates ($\sim 300\text{-}500\mu\text{m}$) __ (A); zeolites-rich zones ($50\text{-}60\mu\text{m}$) __ (B); different targeted ‘zeolitic’ particles __ (C).