

## Adsorption of Alanine on Ferroelectric Surfaces

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Chiral purity is of great importance for pharmaceutical and food industries due to potentially contrasting biological activity that enantiomers could possess [1, 2]. It has also been important in studies of the origin of life addressing the emergence of biological homochirality [2]. The ultimate link between these and other fields studying enantioselective processes is the importance of chiral adsorption on solids surfaces [3].

Here, using DFT calculations, we study the adsorption of (*R,S*)-enantiomers of alanine on model ferroelectric (FE) surfaces. We found that there is an enantiospecific adsorption of approximately 80 meV ( $\approx 1.84$  kcal/mol), about twice the differential energy of adsorption found for this amino acid on chiral calcite [4].

This first study reveals the potential use of FE surfaces for simple, accessible and controllable resolution of racemic mixtures.

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