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Role of ALBA in Catalysis

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Commercial like catalysts are very complex systems due to the interplay of different parameters which complicate the understanding of the active site. To this we have to add the dynamic behaviour of the catalyst as well as possible structural catalyst modifications due to reaction conditions which may take place at the surface or even at the subsurface or bulk level of the catalyst influencing its catalytic performance. This talk will discuss the spectroscopic requirements for handling the complexity of actual catalysts using several examples from our joint work with ALBA. The necessity of surface sensitive techniques, multimodal analysis and operando spectroscopic tools under reaction relevant conditions will be specifically taken into account. In the second section of our talk we would like to provide an illustration of how ALBA supports the development of catalysts from basic science to practical application in industry. A few remarks regarding ALBA II involvement in catalysis will be done at the conclusion of the talk, with a focus on nanoscale resolution, multimodal analysis and high pressure spectroscopies.

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