

EES Catalysis

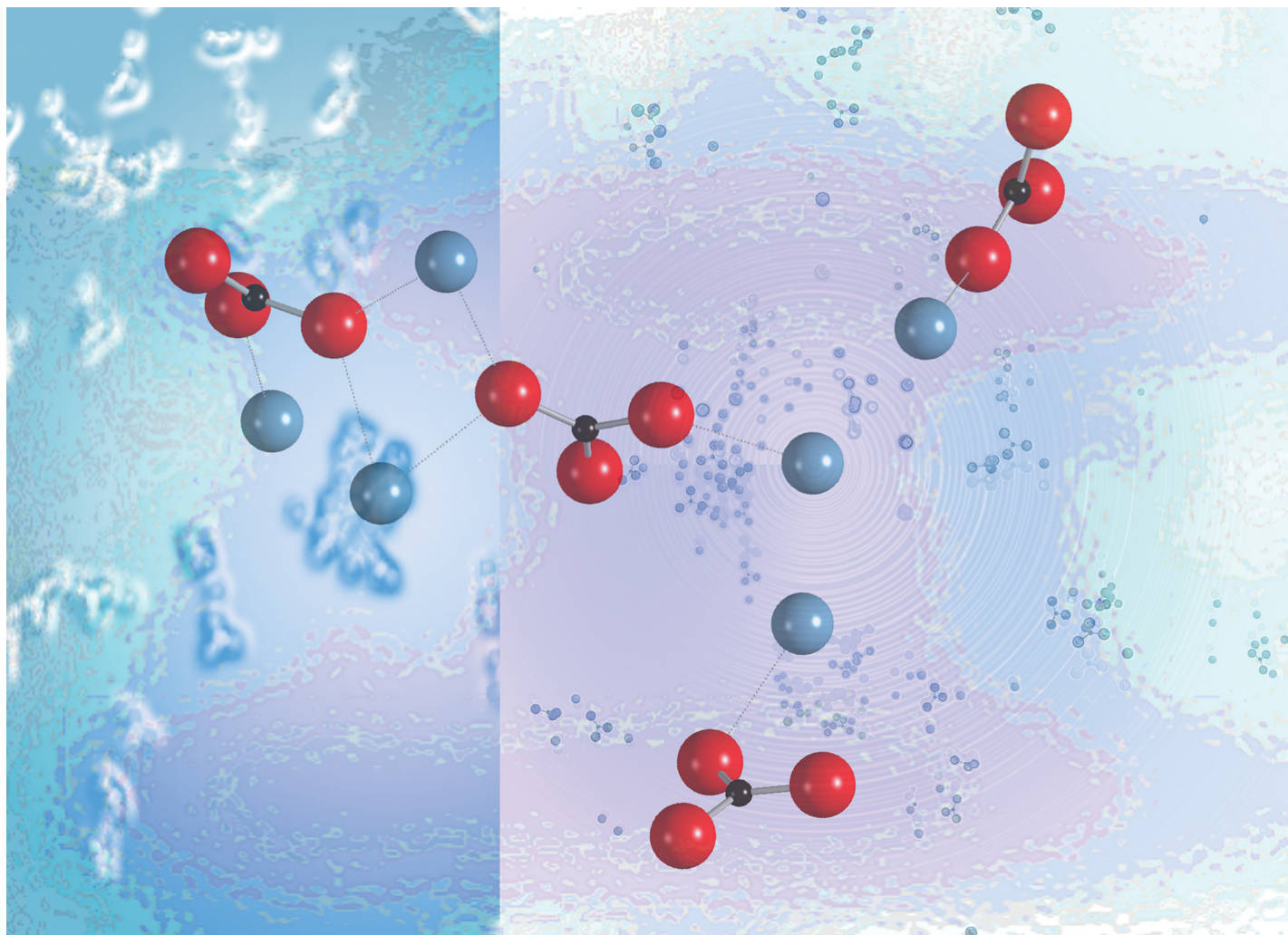
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**Fundamental questions
Elemental answers**



Showcasing research from Oak Ridge National Laboratory (USA), New Mexico State University (USA) and Ariel University (Israel).

Impact of magnetic and electric fields on the free energy to form a calcium carbonate ion-pair

Electromagnetic fields have been used in water treatment and desalination, yet a molecular scale understanding of the effects of external fields on mineral nucleation and growth remains elusive. Researchers from Oak Ridge National Laboratory, New Mexico State University and Ariel University employed molecular dynamics simulations to uncover the atomic pathways and free energy landscape involved in forming the $[\text{Ca}-\text{CO}_3]^0$ ion pair under external fields, offering crucial insights into the elemental steps of mineral scale formation.

As featured in:



See Ke Yuan *et al.*,
Phys. Chem. Chem. Phys.,
2024, **26**, 27891.