

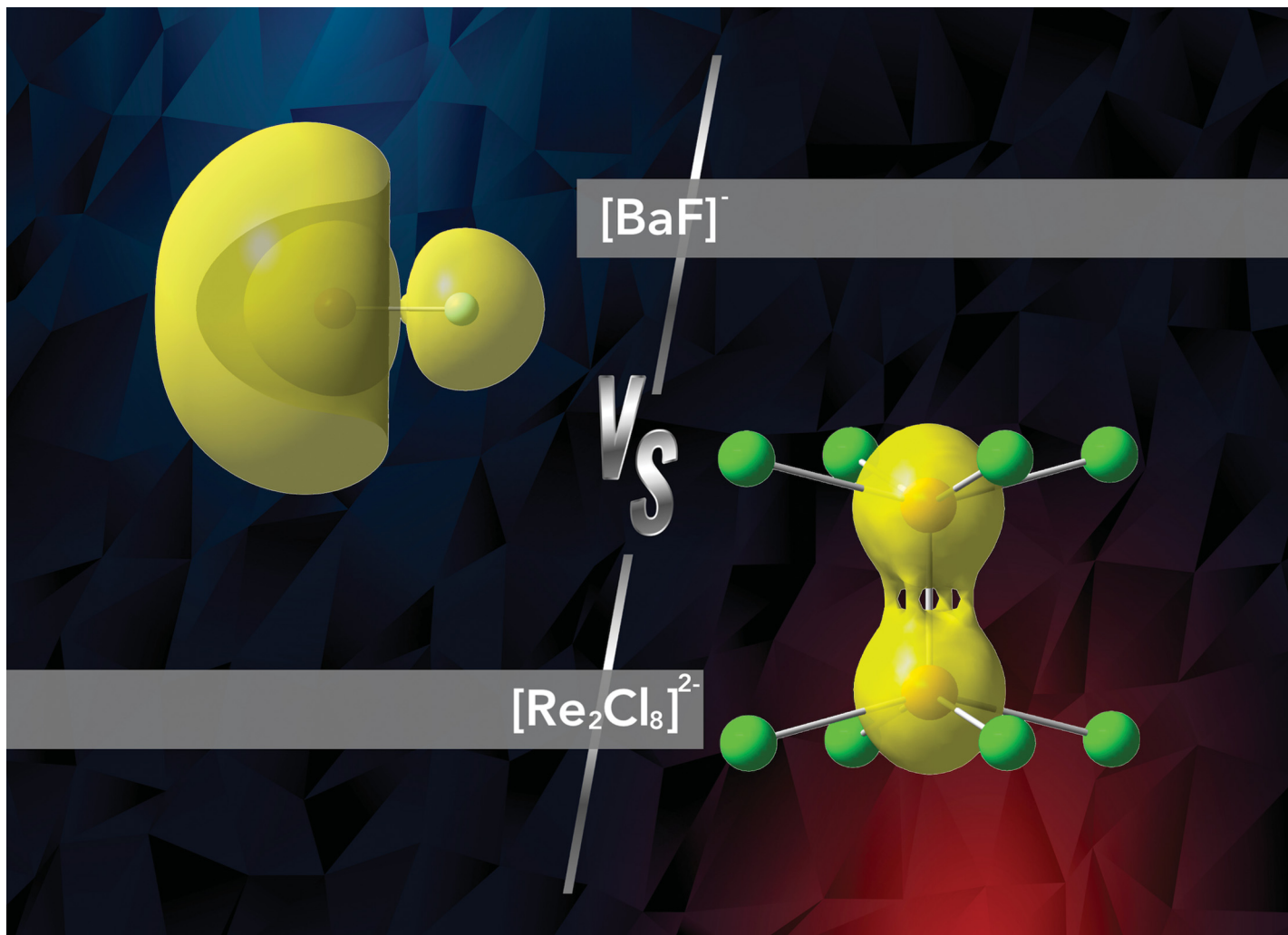
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Elemental answers**



Showcasing research from Grupo de Química Computacional y Teórica de la Universidad San Francisco de Quito (QCT-USFQ), Quito, Ecuador.

Exploring the bonding in alkaline earth halides AeX^- ($\text{Ae} = \text{Be-Ba}$, $\text{X} = \text{F-I}$) from Fermi hole localization and QTAIM perspectives

This work shows that the quadruple bond in $[\text{Re}_2\text{Cl}_8]^{2-}$ is characterized by the presence of four well-defined electron localization basins around the Re-Re bond axis. This feature is not observed in the $[\text{AeX}]^-$ ($\text{Ae} = \text{Be-Ba}$, $\text{X} = \text{F-I}$) systems, recently proposed to bear multiple bonds. The latter observations are supported by a further analysis based on the delocalization index.

Image background designed by starline / Freepik.

As featured in:



See F. Javier Torres *et al.*,
Phys. Chem. Chem. Phys.,
2025, 27, 2333.