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Institut Lavoisier de Versailles

GABRIELLE MPACKO PRISO REMPORTE LE PRIX POSTER LORS DES "1ST FRENCH - ITALIAN COORDINATION CHEMISTRY DAYS"

Gabrielle Mpacko Priso, doctorante dans l'équipe MIM, a remporté le prix du meilleur poster lors du premier congrès Franco-Italien de chimie de coordination (1st French - Italian Coordination Chemistry days) organisé à l'Institut de science et d'ingénierie supramoléculaires (STRASBOURG).

Son poster intitulé "Clustering six electrons within Dawson-like Polyoxometalate" résumait ses travaux récemment publiés dans Angewandte Chemie.

Lors de ce congrès qui réunissait 150 participants (65 posters), Karoly Kozma, post-

doctorant de l'équipe MIM, a présenté ses résultats sur les POMs super-réduits .

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CLUSTERING SIX ELECTRONS WITHIN DAWSON-LIKE POLYOXOMETALATE

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An odd 'electron reservoir'

The early transition metals in their highest oxidation state (V^{5+} , Mn^{7+} , W^{6+}) behave singularly, forming discrete, anionic polynuclear metal-oxygen anions, named polyoxometalates (POMs). This class of inorganic entities exhibits an extremely rich structural diversity in relationship with cumulative potentialities useful for applications in catalysis, medicine, or energy storage and conversion. The most striking properties of POMs is certainly their ability to store massively electrons, making them appealing electro-reducible redox mediators for electrochemical energy storage systems (e.g. redox-flow batteries). However the structure and the properties of super-reduced POMs remain unexplored.

Preliminary reduction of Keggin-type POMs

Does the super-reduction of non-Keggin-type POM lead to metal-metal bonds?

General informations about polyoxometalates (POMs)

Two isomers of non-reduced POM

Formation of the six-electron reduced POM

Disproportionation of 4 e⁻ reduced POM leading to POMs containing W^V-W^{VI} bonds

Functionalization of the 6 e⁻ reduced POM

To know more about this work

Acknowledgments

The poster is a scientific presentation of research on polyoxometalates (POMs). It features several diagrams and graphs. The 'General informations' section shows the Keggin and Dawson structures. The 'Two isomers' section shows two different Dawson-like structures. The 'Formation of the six-electron reduced POM' section shows a series of chemical structures and a graph of the reduction potential. The 'Disproportionation' section shows a reaction scheme where a 4-electron reduced POM disproportionates into two 2-electron reduced POMs. The 'Functionalization' section shows a 6-electron reduced POM reacting with a ligand. The poster also includes a QR code and a list of acknowledgments.