INTERCALATION OF A MOLYBDENUM \( \eta^3 \)-ALLYL DICARBONYL COMPLEX IN A LAYERED DOUBLE HYDROXIDE AND CATALYTIC PERFORMANCE IN OLEFIN EPOXIDATION

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Interest in molybdenum allyl dicarbonyl complexes stems mainly from their use as starting materials or as (pre)catalysts for various organic transformations. In recent work we showed that the complexes [Mo(\( \eta^3 \)-C\(_3\)H\(_5\))Cl(CO)\(_2\)(L)] (L=2,2′-bipyridine, 4,4′-di-tert-butyl-2,2′-bipyridine) are convenient precursors to oxomolybdenum(VI) compounds that selectively catalyze the epoxidation of olefins [1]. The immobilisation of the metal carbylons on a suitable support could bring numerous benefits, such as easier catalyst recycling and product separation.

In the present work, the complex [Mo(\( \eta^3 \)-C\(_3\)H\(_5\))Cl(CO)\(_2\)(2,2′-bipyridine-5,5′-dicarboxylate)] has been successfully incorporated into a Zn–Al layered double hydroxide (LDH) by a one-pot coprecipitation route from aqueous solution and the resulting hybrid nanocomposite Zn,Al-bpdcMo was characterized by various techniques [2]. The material Zn,Al-bpdcMo was used as a precatalyst in the selective liquid phase epoxidation of cis-cyclooctene with tert-butylhydroperoxide as oxidant.

![Figure: Schematic representation of the interlayer arrangement of guest anions in the material Zn,Al-bpdcMo (on the left); SEM image of Zn,Al-bpdcMo (on the right)](https://example.com/figure)

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