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## **TRACELESS TRANSITION METAL CATALYSIS FOR SYNTHETIC APPLICATIONS\***

**Key words:** catalysis, catalytic C–H arylation, catalytically active species, irreproducible syntheses, phantom reactivity.

The report will present current trends in the development of catalytic chemistry and the importance of metal catalysis in organic synthesis.

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## **CALIXARENE-BASED SUPRAMOLECULAR SYSTEMS: A PLATFORM FOR NANOMATERIALS DESIGN BY SELF-ASSEMBLY\***

**Key words:** calix[4]arenes, colloid nanoparticles, catalytic systems, smart materials.

Lower rim thiacalix[4]arenes derivatives in *cone* and *1,3-alternate* conformations have many advantages to create a wide range of precursors for the design of very sophisticated supramolecular architectures.