



**Taking coordination chemistry into nano-confinement: A
journey in vanadium chemistry**

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Design, successful synthesis, efficacy and mode of action are the defining properties of all metal based compounds belonging to either biological chemistry or material chemistry. How metal containing bio- active molecules function in these biological environments and in materials warrant investigations into the fundamental coordination chemistry and redox properties of the metal. With the advance knowledge on membrane-molecule interaction one can smartly choose molecules for their further mechanistic study with DNA. This understanding could potentially helps us to move further for the clinical trials of these bio-active compounds which are significantly expensive and time consuming. Thus, membrane study will address the missing link for the characterization and clinical trial of potential drugs. Using simplified models for lipid membrane such as micelles, reverse micelles, monolayer or vesicles, properties of bio-active metal complexes can be explored efficiently. This will ultimately lead to the hypothesis that interaction with lipid membrane can make critical contributions to the mode of action in certain drugs.