

# TOWARDS ATOMIC RESOLUTION IN COLLOIDAL SCIENCE: SOFT CHEMICAL STRATEGIES FOR THE SYNTHESIS OF METAL CLUSTERS

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In the past decade a number of chemical methods have been developed for the preparation of nanoparticles of different metals down to the nanometer/subnanometer range, thus entering into the Cluster region. It has been observed that the properties of these Clusters are very different from their “older brothers”, the colloidal particles, due to the quantum confinement of electrons and holes. The transition from the solid state (characteristics of the Colloids) to the atomic/molecular level (characteristics of the Clusters) can be now observed and studied because new chemical synthetic routes have been/ are being developed. Although this is just the beginning of a very promising area, there are already enough proofs that new interesting properties can come up. Catalytic, fluorescent, magnetic, electronic, optical...properties, very different from those observed with colloidal particles, seem to appear in this fascinating cluster region. Moreover, because the number of superficial atoms is comparable to (or even higher than) the number of those located in the interior, the cluster attached species (capping) may play an important role in the final properties of these nano/subnano-meter structures. This talk will be devoted to introduce different soft chemical approaches recently developed in our lab, which can be used for the preparation of metal clusters

## References:

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