

# Nonlinear optical scattering as a tool to study symmetry and dynamical processes

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We will introduce nonlinear optical light scattering as a powerful tool to study metal nanoclusters, plasmonic nanoparticles and dynamical processes such as nanoparticle aggregation and supramolecular organization of polymers. We will demonstrate that nonlinear light scattering can be used to determine structure and symmetry of any material in solution, either as an isolated entity or in an aggregated form. Examples will include the study of gold nanoclusters, aggregation of plasmonic gold nanoparticles and supramolecular organization of polymers. Knowledge of such processes is of crucial importance to obtain a fundamental understanding of metallic behavior in nanoclusters, aggregation effects in nanoparticles and crystallization processes in general. A better knowledge of these processes can also be of great importance to tune the final materials properties for applications.

## REFERENCES

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