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Application of ultrafast 2D-IR Spectroscopy to metalcarbonyls: photochemistry and isomerisation dynamics in solution.

Abstract:
The presentation discusses principles and advancement in femtosecond one-/two-dimensional infrared spectroscopies followed by detailed studies of vibrational relaxation and ground/excited state chemical dynamics of selected metalcarbonyls in solution. The femtosecond one-dimensional time-resolved infrared or UV_{pump}-IR_{probe} technique was applied to investigate photochemistry of hydrogenase active centre model compound in series of organic solvents while the two-dimensional infrared spectroscopy (2D-IR) and related Transient 2D-IR technique has been applied to study ground state conformational isomerisation and photochemistry of $[(nPr\text{-}Cp)W(CO)_3]_2$ dimer in n-heptane.