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New microscopies - going beyond the diffraction limit

These last years, some new techniques have overcome the diffraction limit of spatial resolution in microscopy, which was described by the Abbe's criterion. Some experimental procedures are based on the ability to isolate the emission of a single nano-object, giving rise to very useful methods for the tracking of bio-objects. Some others use very tiny tips to diffract near field into propagating modes. At last, hyper resolution methods like STED or STORM, whose inventions were rewarded by the 2014 Nobel prize in chemistry, use nonlinear response or photo activation of molecule to address single nano-objects. These new microscopy techniques allow us to take optics to the nanometer spatial scale.

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Classification de thématique: Light as a messenger