Surface-Modified Organic Dye Labeled Luminescent SiO$_2$ Nanoparticles

- Manufactured by sol-gel method
- Diameter range 40 – 1400 nm as monodisperse (polydispersity 3 – 12%) and non-porous particles doping with different organic dyes
- Available organic dyes: Rhodamin and Fluorescein derivatives, ATTO 488, ATTO 565, ATTO 610, ATTO 665, ATTO 725, ATTO 647N, IRDye® 800CW, IRDye® 800RS
- Hydrophilic surface with terminal Si-OH groups
- Stable in organic medium and aqueous buffers separation through sedimentation or centrifugation
- Different surface functionalities (e.g. -OH, -SH, -NH$_2$, -COOH) for the covalent bonding of proteins, antibodies or other molecules manufactured with covalent bonded antibodies or proteins (e.g. streptavidin)

Suspensions of dye-labeled SiO$_2$ nano-particles under excitation with UV lamp ($\lambda = 365$ nm)

TEM micrograph of dye-labeled SiO$_2$ nanoparticles