# Adapting Stochastic Optical Reconstruction Microscopy (STORM) for imaging of sub-micron structures in photoresist

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The resolution of optical imaging is limited by the well-known Abbe-criterion to more or less λ/2. In life sciences, however, super resolution techniques have been developed that extend this limit by several orders of magnitude. In 2014 Stefan Hell, Eric Betzig and William Moerner were honored with the Nobel Prize for this development. The basic idea is to use fluorescent molecules as markers that can be switched on and off by illumination with a pulse laser. Different types of super resolution imaging are currently applied in life sciences.

In our group we adapted this idea to the measurement of technical submicron structures in photoresist, e.g. photomasks that are used in the lithographic process of chip-making. In a first step we doped a photoresist with a fluorescent dye. A submicron pattern was inscribed and we used an existing STORM (Stochastic Optical Reconstruction Microscopy) setup for imaging the structure. In our presentation we will show early results of this research work.