

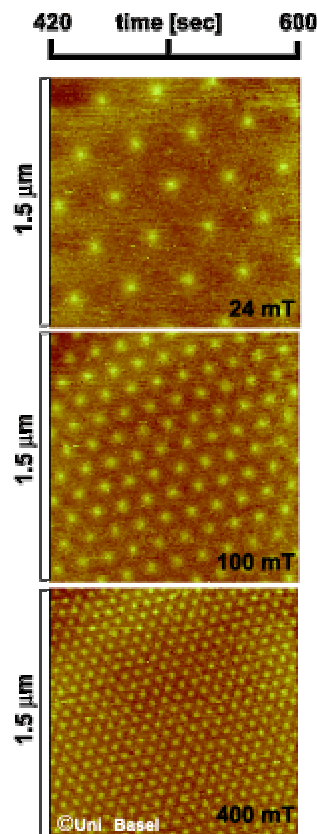
## Former Research

- Dendrimer Films
- High- $T_c$  Superconductors
- Carbon Nanotubes
- Fullerenes
- Vortex Lattice on NbSe<sub>2</sub>

## *Vortex Lattice on NbSe<sub>2</sub>*

The vortex lattice in the classical superconductor NbSe<sub>2</sub> was studied at 2.7 K in various magnetic fields perpendicular to the *c*-crystal axis. By scanning the STM tip at voltages below the energy gap (i.e. < 1 mV), the vortex lattice could be imaged parallel to the surface.

This opened the possibility to study vortex dynamics (see picture) and vortex pinning, i.e. the hindrance of vortex movement by defects in the crystal structure, by introducing small columnar defects in the NbSe<sub>2</sub> single crystals and visualizing the effect of these defects with STM.



*Vortex dynamics imaged on an NbSe<sub>2</sub> sample at 2.7 K. A small stripe was imaged over a time frame of 180 sec after applying the indicated magnetic field.*

Project partner were J. Wiesner's group, [GSI Darmstadt](#).

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