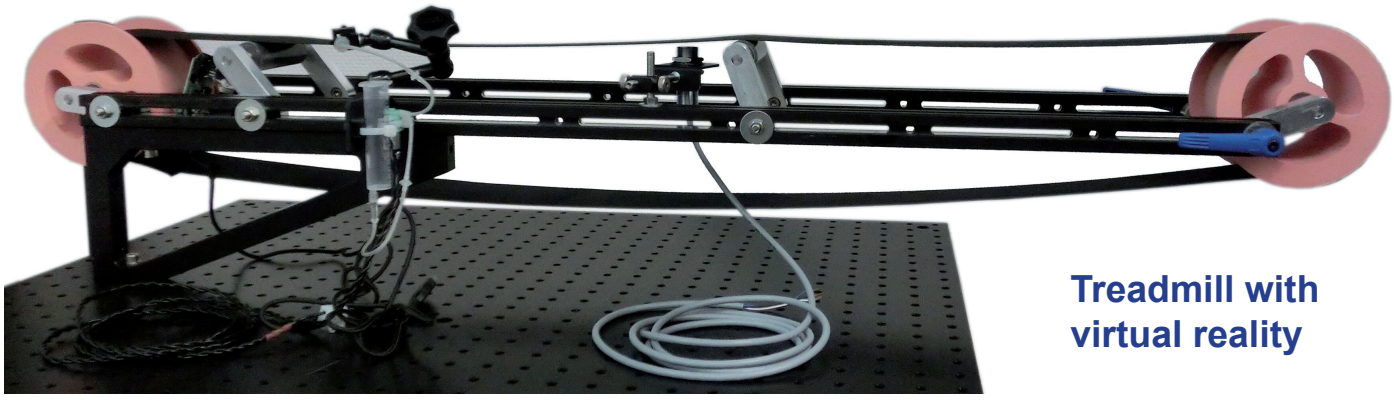
LN-TREADMILL
WITH VIRTUAL REALITY

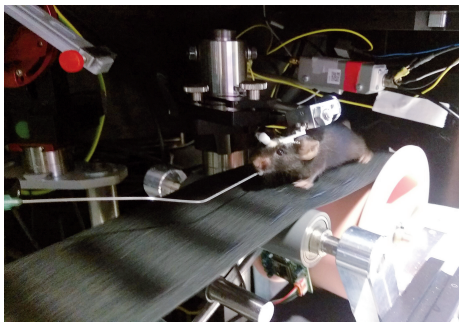
Luigs & Neumann
Technology | Innovation | Manufacturing

Among behavioral neuroscience, novel experiments are planned and realized in awake animals under conditions in which the animal is head-fixed but able to move. These studies depend on accurate readout of the animals behavior e.g. movement speed and control of outside influences. There a long setup-compatible treadmill, with precise speed and position readout, external clues and rewards, will become a standard method of behavioral neuroscience.

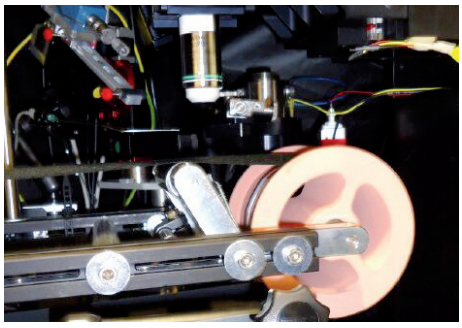
Our treadmill was designed to investigate the integration of sensory and spatial information in the brain of mice. The system allows tactile, visual or olfactory stimulation of a head-fixed mouse, while the animal is moving a treadmill belt and navigating in a virtual environment. In parallel all established optical and electrophysiological measurements or manipulations for head-fixed animals can be performed e.g. to study navigation strategies.



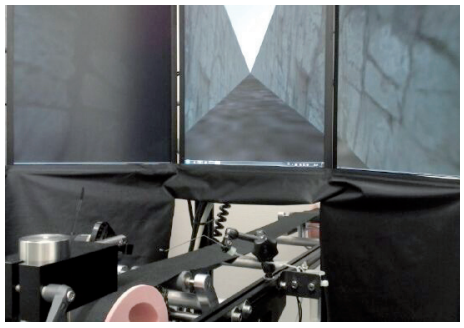
Treadmill with virtual reality



LN headpost stand



Treadmill at two Photon microscope



VR Screens / Running position of the mouse

Stress-relieved voluntary running behavior

Customized treadmill belts up to 4m (13‘) of length

Individual visual and textile cues

Lab approved, easy to use soft-and hardware

Precise digital or analog position readout

Automatic liquid reward at predefined position, distance or speed

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