

## Olfactorial Perceptronics

Initiative: Kurswechsel – Forschungsneuland zwischen den Lebenswissenschaften und Natur- oder

Technikwissenschaften

Ausschreibung: Qualifizierungskonzepte

Bewilligung: 03.03.2022

Laufzeit: 4 Jahre

Projekt-Website: <https://perceptronics.science>

Human olfaction is a very efficient sensory system. Early on it was recognized that the mere detection of a given set of molecules is not enough for an electronic analogue of human olfaction. An artificial nose requires not only sensation but perception - the interpretation of sensation in light of experience. This can be achieved by using large empirical datasets of human perception and methods of artificial intelligence. A breakthrough of perceptive electronics (perceptronics) can only happen in a concerted effort of science, engineering and medicine which stringently builds on recent advances in each discipline. The olfactorial perceptronics group will work in this spirit as an interdisciplinary team and establish four linked research topics in (nano) sensorics, olfaction, perception and machine learning. The final goal is to advance the digitization of olfaction towards a yet unseen technology.

### Projektbeteiligte

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**Open Access-Publikationen**

**Recent advances in technologies toward the development of 2D materials-based electronic noses**

**Machine learning-enabled graphene-based electronic olfaction sensors and their olfactory performance assessment**

**Subjective Perception of Recovery and Measured Olfactory Function in COVID-19 Patients**

**Exploring brain functional connectivity in patients with taste loss: a pilot study**

**A parosmia severity index based on word classification predicts olfactory abilities and impairment**