

AG Prof. Erika Garutti

[www.physik.uni-hamburg.de/iexp/gruppe-garutti.html](http://www.physik.uni-hamburg.de/iexp/gruppe-garutti.html)

## SiPM research @ Uni Hamburg

Silicon Photomultipliers (SiPM) are arrays of silicon diodes (typically several thousands with areas between  $10 \times 10 \mu\text{m}^2$  and  $100 \times 100 \mu\text{m}^2$ ) operated several volts above their break-down voltage. Already single photons can start an avalanche breakdown resulting in a detectable signal. Compared to vacuum-photomultipliers, SiPMs are smaller, less expensive, and operate in magnetic fields and at lower voltages. Thanks to their excellent performance SiPMs have many applications which include particle physics detectors, 3D laser imaging, quantum computing, fluorescence imaging, PET scanners, all the way to LIDAR for automotive driving. SiPMs also represent an important commercial market.

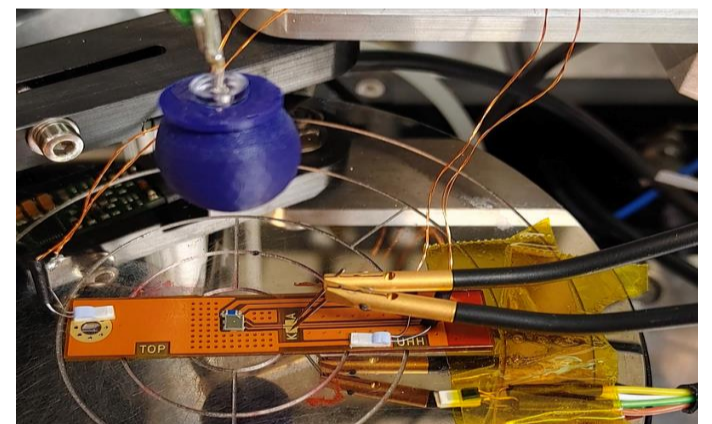
Our group is engaged in fundamental research on open questions of SiPMs.

- SiPM response function
- Characterization of irradiated SiPMs
- Novel SiPM designs

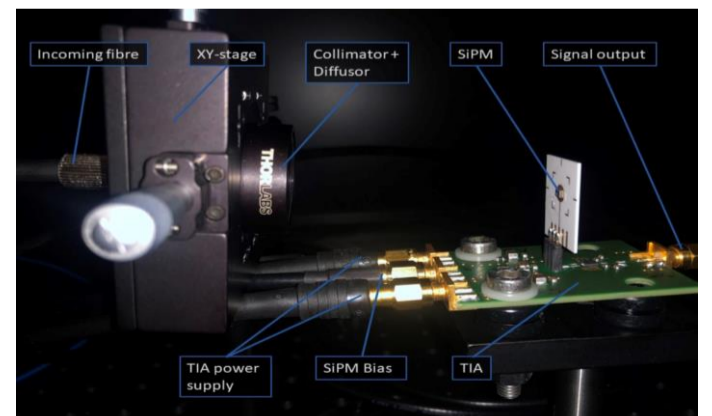
We offer opportunities for Bachelor and Master theses on various aspects of this novel research.

You will obtain detailed knowledge about SiPMs, modern measurement techniques and data analysis.

SiPM on a cold chuck



Setup for measuring novel SiPMs



Curious? Contact us:

Prof Dr. Erika Garutti, [erika.garutti@uni-hamburg.de](mailto:erika.garutti@uni-hamburg.de)

Dr. Jörn Schwandt, [joern.schwandt@uni-hamburg.de](mailto:joern.schwandt@uni-hamburg.de)