



**Mittwoch, 08.06.2022, um 11:15 Uhr**

HS 013, Hörsaalgebäude, Reichenhainer Str. 90 und online via ZOOM

**Dr. Björn Brauer**

Zeiss SMT, Jena/Oberkochen, Germany  
Technisches Gymnasium, Leonberg, Germany

## **Microchip fabrication and its yield optimization through Machine Learning**

The production of microchips is a highly advanced process. Competition between the manufacturers, the goal of cost reduction, and last but not least scientific curiosity have driven the development in the field. Interestingly, Gordon Moore's prediction from 1965 of doubling the number of transistors per chip roughly every two years still holds today. Its latest developments such as FinFET and EUV technology will be discussed in the talk.

The production of new devices is only profitable if the yield of working microchips is high enough, i. e. the number of defects per wafer is very low. Defect inspection tools are detecting such issues very early in the manufacturing process and became indispensable in the development of microchips. In recent years, machine learning based approaches were used to further improve the detectability as well as separability of defects of interest from nuisance events. It will be shown how statistical learning methods, Neural Networks, and Generative Adversarial Networks can be deployed to tackle those problems.

**ZOOM-Link:**

<https://us02web.zoom.us/j/82310833626>

