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FRAUNHOFER INSTITUTE FOR INTEGRATED SYSTEMS AND DEVICE TECHNOLOGY

π-Fab® ELECTRON DEVICE PROTOTYPE FABRICATION

Customized Electron Devices and Processes

Based on three decades of experience in microelectronics research and development, IISB has extended its activities to industry-oriented low-volume prototype fabrication of custom-tailored electron devices, with a focus on power devices, CMOS devices, passives, sensors, and MEMS.

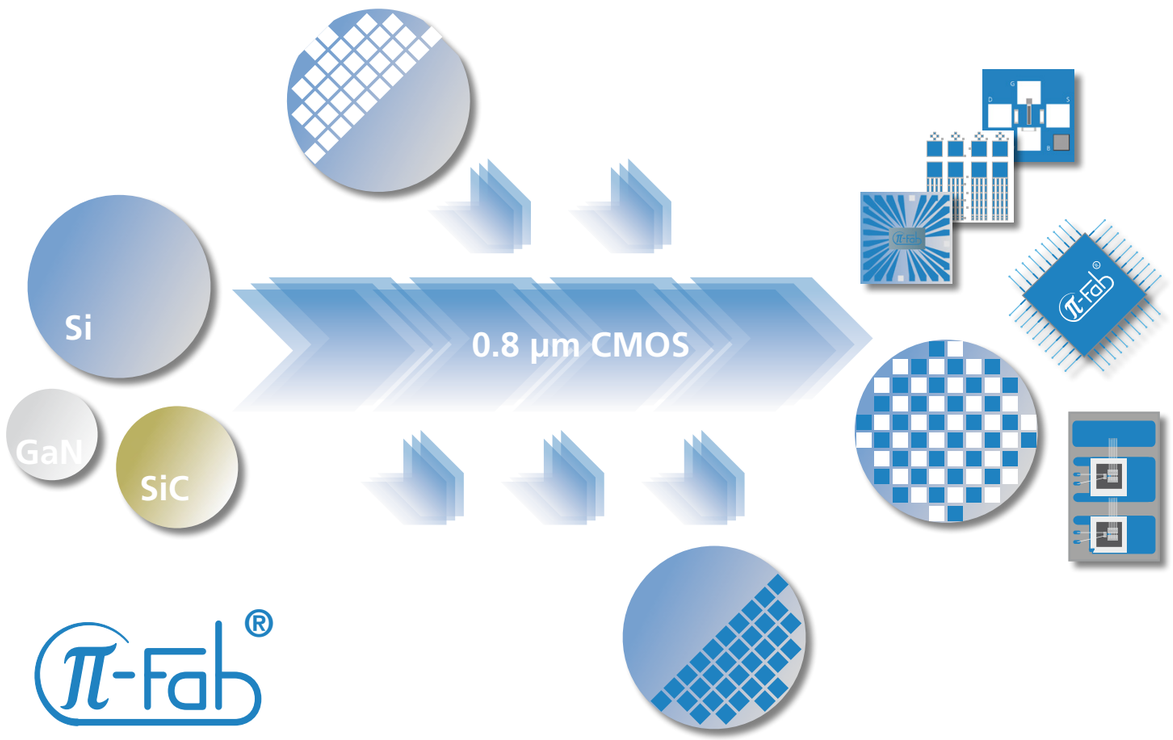
These prototyping services are offered and performed under the brand name π-Fab. In addition, π-Fab supports its customers with particular processing steps or combinations of steps, such as lithography, oxidation, LPCVD, ion implantation, annealing, dry and wet etching, metallization, diffusion, layer deposition, metrology, passivation, PECVD and ALD, and much more.

Qualitity management and statistical process control are established in order to meet all the requirements of our customers.

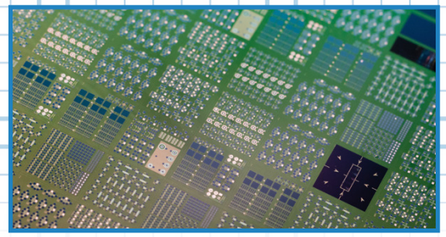
π-Fab: Flexibility as a Matter of Principle

The unique characteristic of π-Fab is a high flexibility in wafer material and size. Silicon wafers with diameters of 150 mm and 200 mm are handled by default, further diameters on request. The process line is based on a 0.8 µm Si-CMOS technology. In addition, special attention has been given to silicon carbide (SiC) device processing on 100 mm and 150 mm wafers. For that, additional equipment is provided in π-Fab in order to realize all dedicated SiC process steps, such as epitaxy, ICP dry trench etching, growth of silicon dioxide in nitrous atmospheres, implantation of aluminum at elevated temperatures, implant activation annealing at temperatures of up to 1900 °C, or ohmic contact alloying.

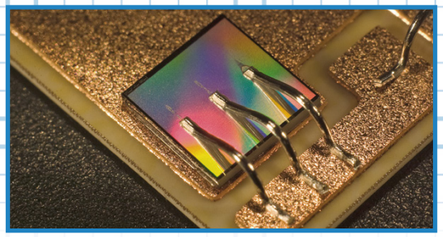
The principle of flexibility is also exemplary for our additional activities in nanostructuring and inorganic thin-film electronics. For this purpose, dedicated equipment, like nano-imprint and advanced FIB-preparation or glove boxes and extended sputtering tools, is available.



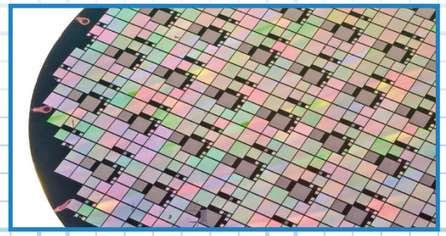
Customized Electron Devices



Novel Device Concepts



Inorganic Thin-film Electronics



Nanostructuring