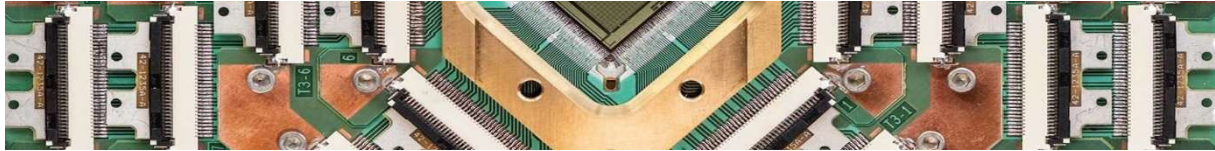




# Future Computing Paradigms – Integrated Circuits as a Central Element



**Vortrag am 11.März um 14:00**

**in Hörsaal II (0.09), Foyer Hochhaus C6 4**

**von Prof. Stefan van Waasen,**

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**Abstract:** Quantum and neuromorphic Computing are promising technologies to significantly enhance current computing capabilities. Using quantum mechanical effects or new types of nanodevices, as e.g. memristors, requires intensive usage of integrated circuits (ICs) for enabling the potential for scaling and integration. These topics are the central research areas of the Integrated Computing Architectures institute division at Forschungszentrum Jülich.

Especially the field of quantum computing is an interdisciplinary challenge in this sense. It needs to bring together the deep physics knowledge, electrical engineering competencies, cryogenic expertise up to systems engineering and integration to boost these complex systems into reliable as well as usable approaches. Cryogenic ICs will play here a central role as one key enabler to overcome the wiring and integration challenges. At a certain point this will also require expertise to further hybridized it into the optical domain even for solid-state qubit technologies which offers a great field for the planned Quantum Technologies Center at Saarland University.