

Realization of a low carbon society through game changing technologies

Superconducting Computing for Low Carbon AI

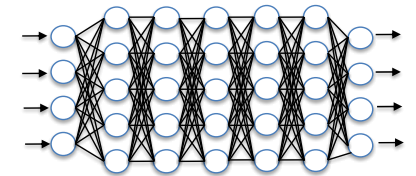
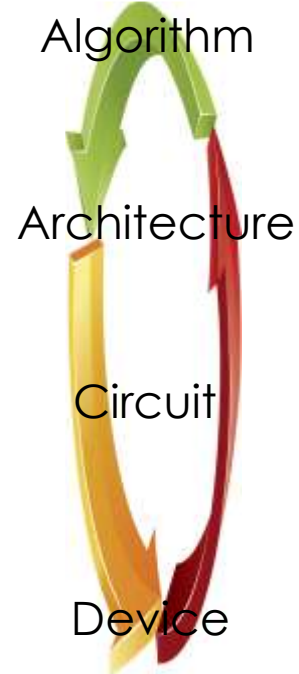
Project Leader : Koji INOUE
Professor, Department of I&E Visionaries, Kyushu University



R&D Team : Nagoya University, The University of Tokyo

Summary :

Moore's Law, doubling the number of transistors in a chip every two years, has so far been contributed to the evolution of computer systems. The growth of such hardware implementation makes a lot of optimization opportunities available to software developers. Unfortunately, we cannot expect sustainable transistor shrinking anymore, i.e., the end of Moore's Law will come. The goal of this research is to open up post-CMOS ultra high-performance, low-power computing. Our approach stands on circuit/architecture/algorithm level co-designs by targeting an emerging device called SFQ (single-flux-quantum). This project aims to propose an SFQ based neural-network accelerator called *SFNuro*.



1.6mW 56GHz ALU

