

Common Vision – UKDF 2006

Interfaces

Piotr Dudek, The University of Manchester
pdudek@manchester.ac.uk

Interfaces

interface out (circuit \Leftrightarrow world)

and interface within (design \Leftrightarrow devices)

- Sensory systems
- Analogue design
- Low-level circuit (cell) design

Sensory Systems

- Sensors & actuators: biological, chemical, physical
- e.g. biomedical: lab on a chip, neural interfaces
- Integration of MEMS
- Sensor interfaces (analogue circuits)
- Smart sensors - integrated sensing/processing, adaptive sensing, active sensing
- Sensor networks, ubiquitous sensing, wireless
- Energy scavenging

Analogue Design

- Sensor interfaces, signal processing, mixed design
- Analogue VLSI Systems
- FPAAs (Field Programmable Analogue Arrays)
- Analogue Computation: neural systems, analogue processors, general-purpose architectures.
- Analogue EDA: modelling, synthesis, methodologies

Low Level Circuit Design

- Analogue and “digital”
- Design with ‘new’ devices: SETs, quantum dots, RTDs, ballistic, molecular, etc...
- Multi-valued logic, threshold logic, etc...
- Robust, fault-tolerant cells
- Low power, charge recycling

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