

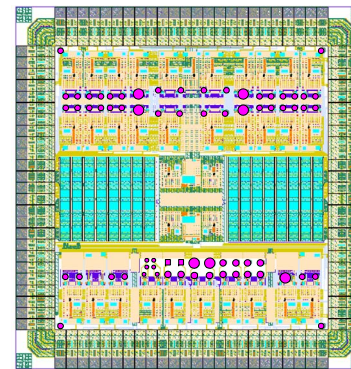


Technion

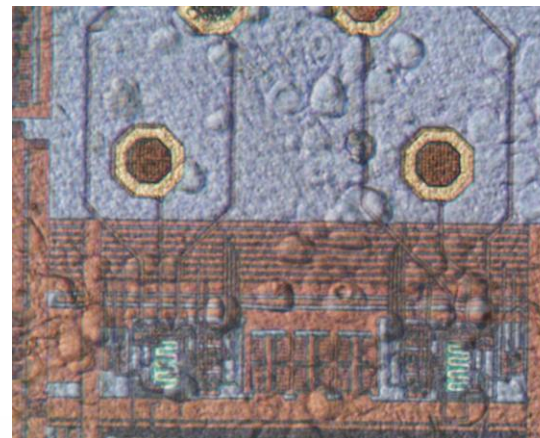
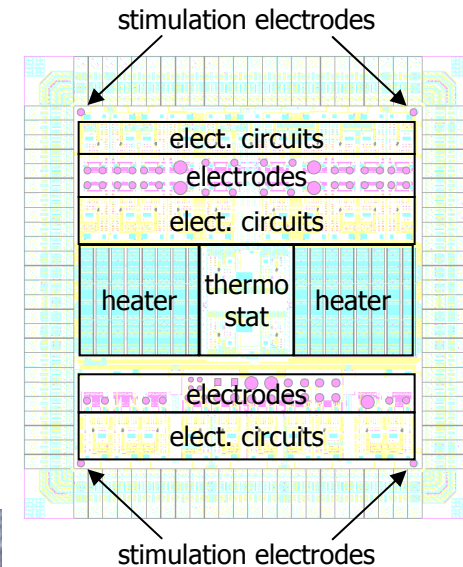
Neurons on a Chip

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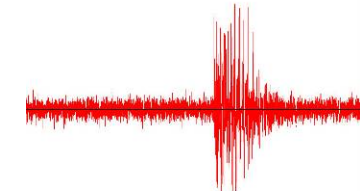
- ❑ A CMOS Multi-Electrode Chip (MEC)
- ❑ Including:
 - ◆ Sensing Electrodes
 - ◆ Stimulating / bias electrodes
 - ◆ Signal acquisition and processing circuits
 - ◆ Digitizing and multiplexing on-chip
 - ◆ Temp sensor and heater
 - ◆ Many test circuits
- ❑ I/O insulated with Sylgard™
- ❑ Some electrodes covered with Hafnium Oxide
- ❑ Some corrosion noted
- ❑ Cortical neurons were cultured on the chip, recorded from and maintained functional for many weeks (Feb-Mar 2005)



Layout of the MEC



Neurons on the Multi-Electrode Chip



Recording of a Burst of Spikes



NeuroVibes Corporation

