Nervou Systems

Who we are

A multidisciplinary start-up team rooted in IIT's Event-Driven Perception for Robotics group, including mechanical and electrical engineering, software dev, neural networks and information theory.

What we do

We are designing bio-inspired, asynchronous, efficient, high density and low latency touch sensors with neuromorphic edge computing capability.

Why us

We target sustainable, bio-degradable sensors from European supply chain, with sensor-processor-actuator integration, to create printable nervous systems.

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Printable, Flexible Artificial 3D Spiking Neural Networks
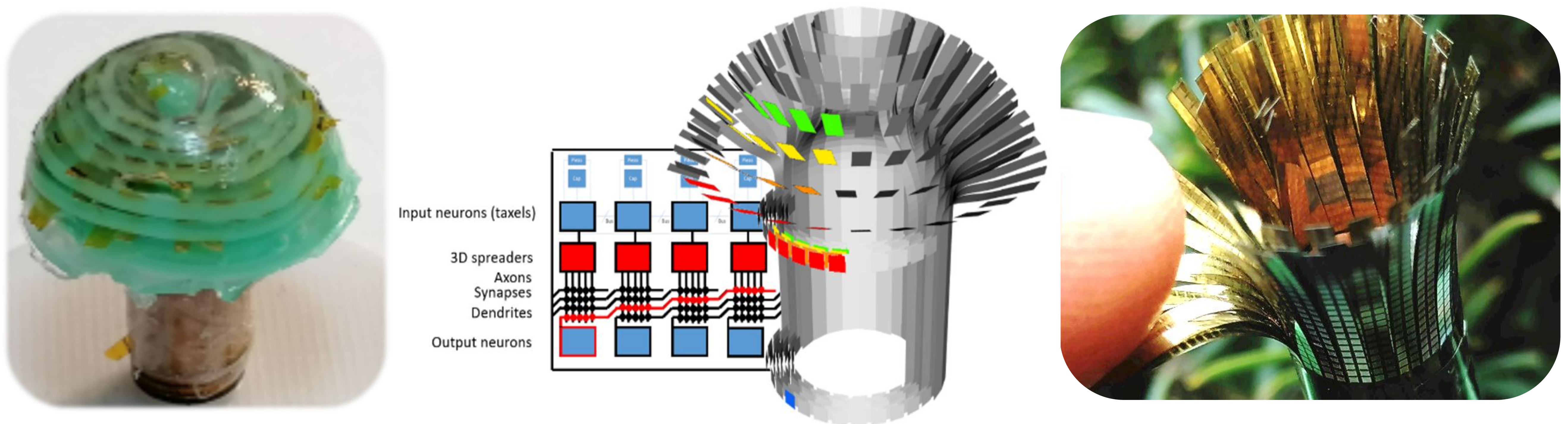
Sensor and Communication

Fig1: (left) assembled dummy sensor (polyimide with silicon spacers) incl. space for spiking neural network (SNN); (center) sensor placement and network infrastructure; (right) photolithographically patterned inorganic transistors.
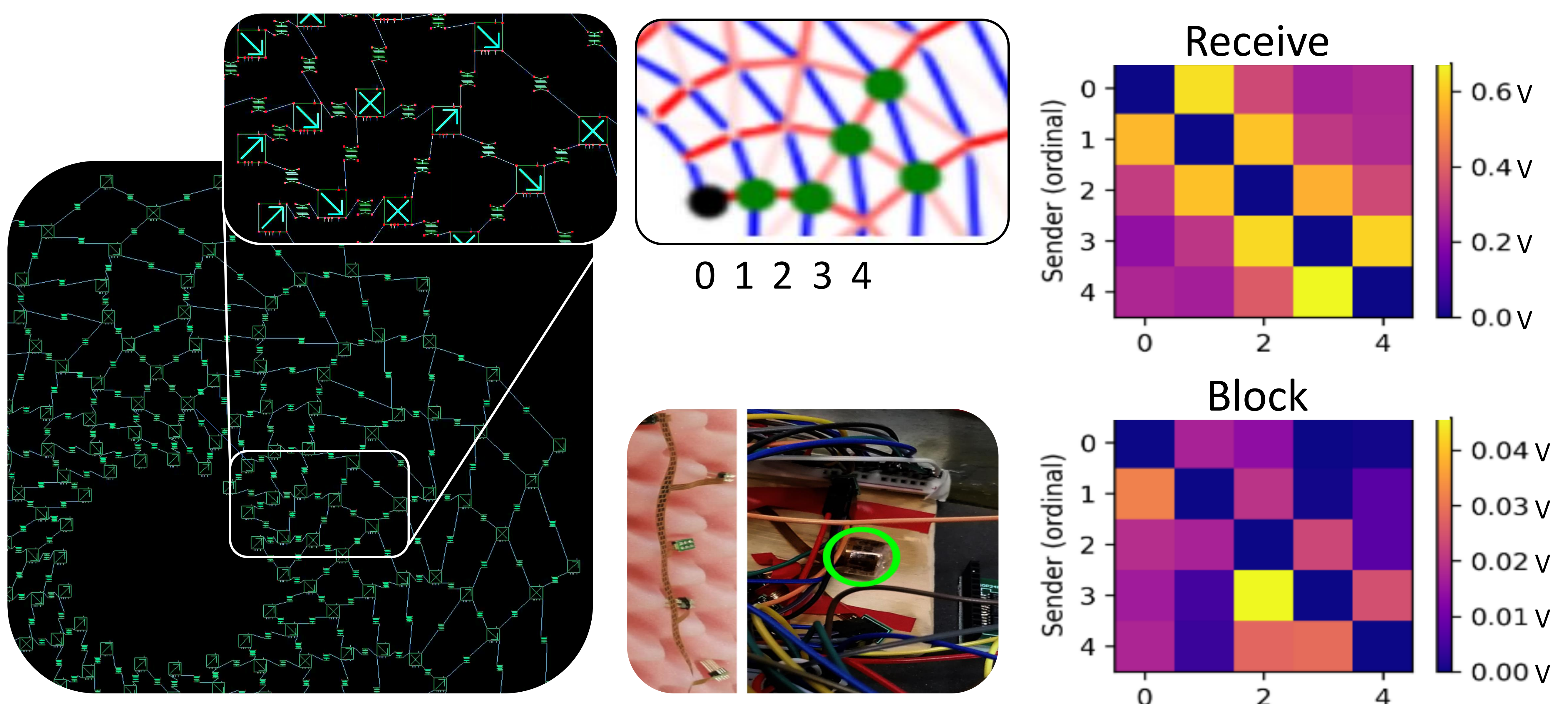
Spiking Neural Network

Fig2: (left) simulated topology of SNN connections across coiled layers via capacitors, with nodes programmed alternately as senders (↗), receivers (↘) and blockers (X); (centre-top) possible axonal pathways formed starting from two neurons at central layer; (centre-bottom) metal-only prototype to test pulsed transmission between coiled layers; (right) heat map of signal strength when sending a pulse from plate and measuring the response at all other plates in a stack, (with ordinal layer numbering following centre-top), suggesting the possibility to create specific axonal pathways.