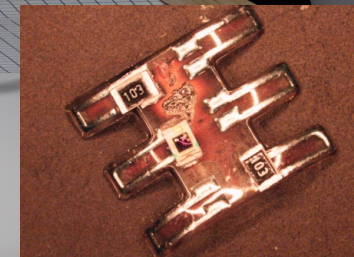
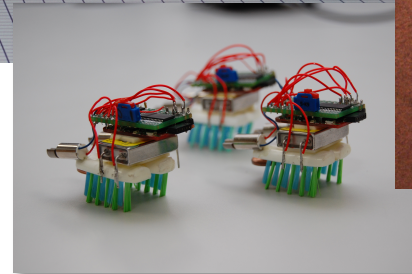
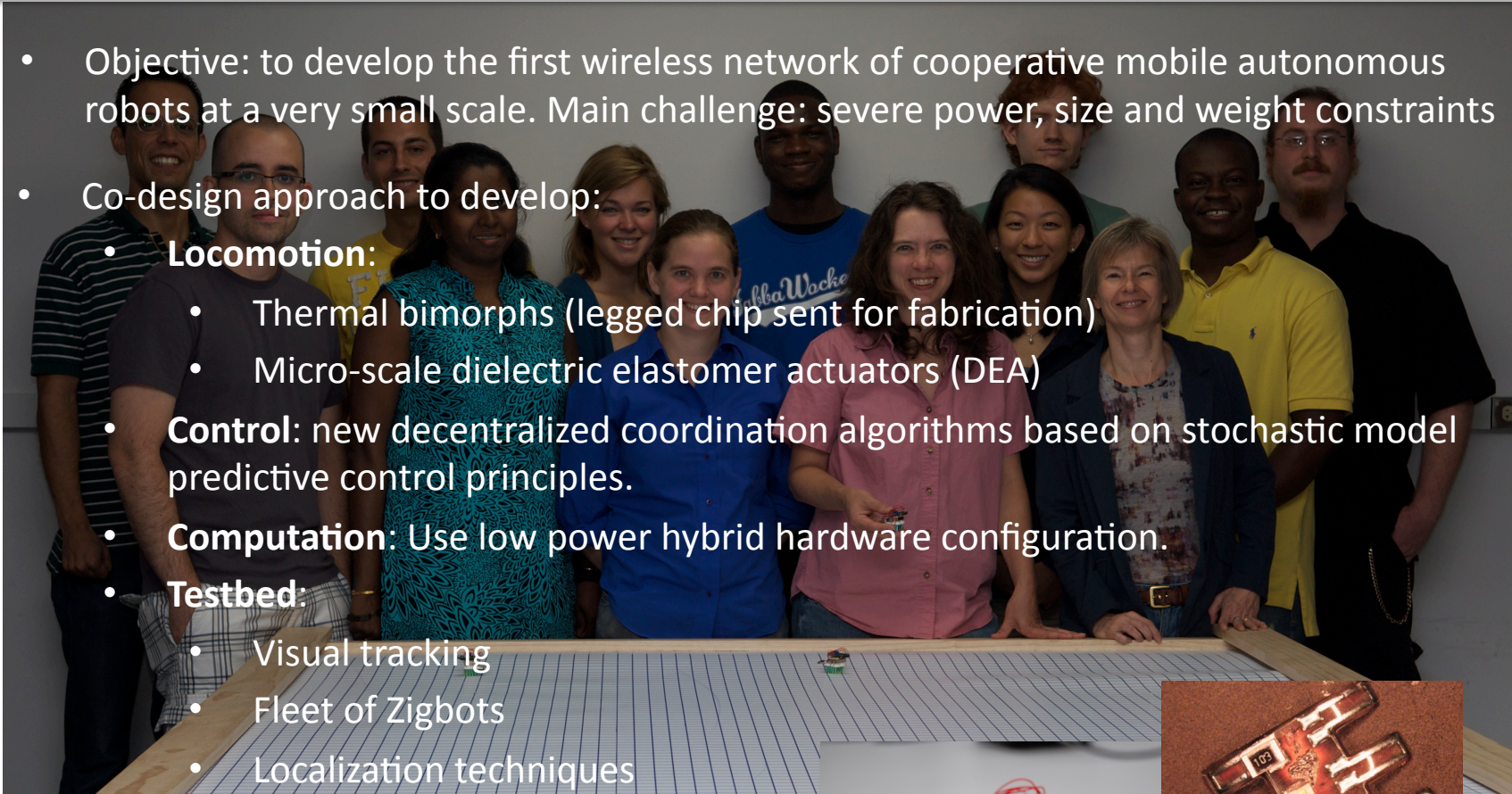


CPS: Medium: Ant-Like Microrobots – Fast, Small, and Under Control

Pamela Abshire, Sarah Bergbreiter, Nuno C. Martins, Elisabeth Smela

Award 0931878, (10/01/2009 --- 09/30/2012)

- Objective: to develop the first wireless network of cooperative mobile autonomous robots at a very small scale. Main challenge: severe power, size and weight constraints
- Co-design approach to develop:
 - **Locomotion:**
 - Thermal bimorphs (legged chip sent for fabrication)
 - Micro-scale dielectric elastomer actuators (DEA)
 - **Control:** new decentralized coordination algorithms based on stochastic model predictive control principles.
 - **Computation:** Use low power hybrid hardware configuration.
 - **Testbed:**
 - Visual tracking
 - Fleet of Zigbots
 - Localization techniques



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