Flex Hybrid Electronics

S&T Campaign: Materials Research
Manufacturing Science
Advanced & Additive Manufacturing

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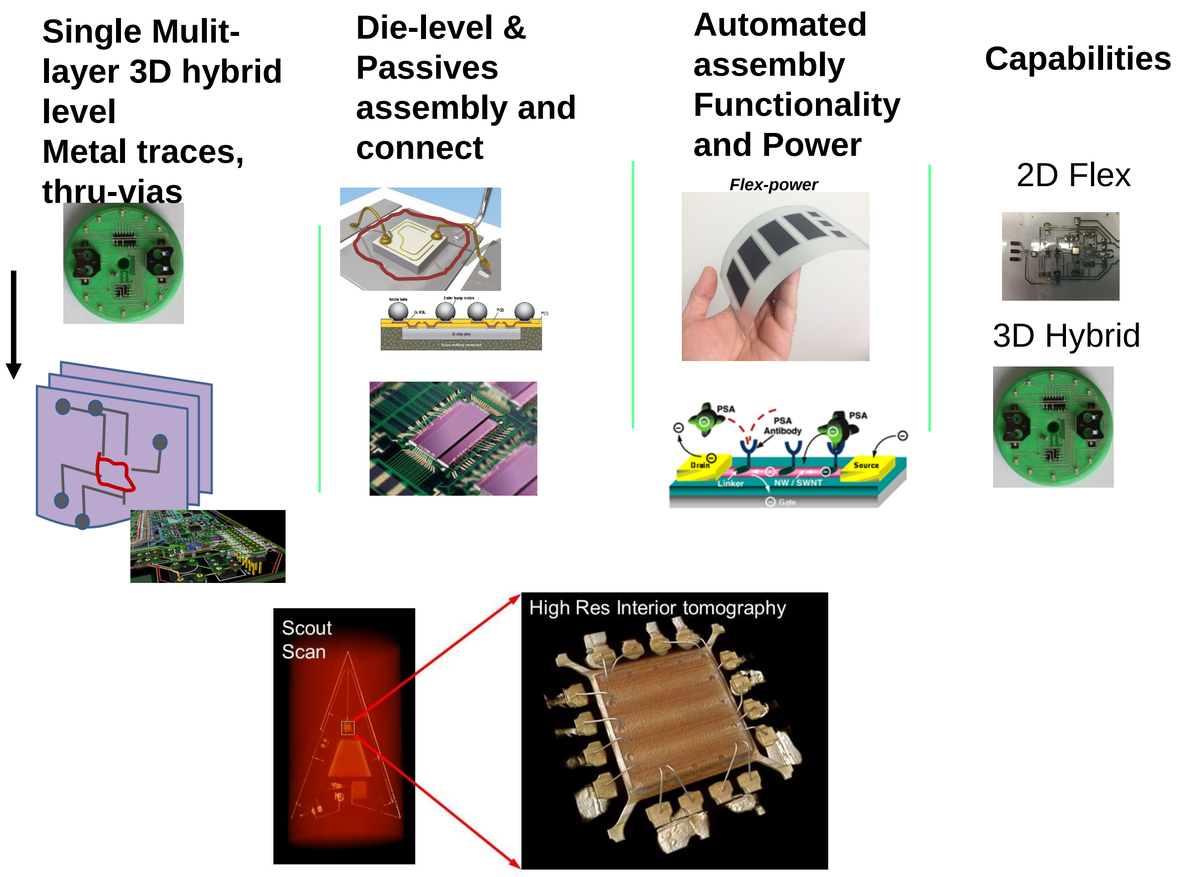
Objective

- **Develop electronics integrated on textiles and in 3D structures to enable wearable, intelligent garments with integrated distributed sensors, power, data**
- **Support Continuous Multi-faceted Soldier Characterization for Adaptive Technologies**
- **Support Soldier Bio-metric Authentication (STCD)**
- **Support OSD NextFlex|America's Flexible Hybrid Electronics Manufacturing Institute**

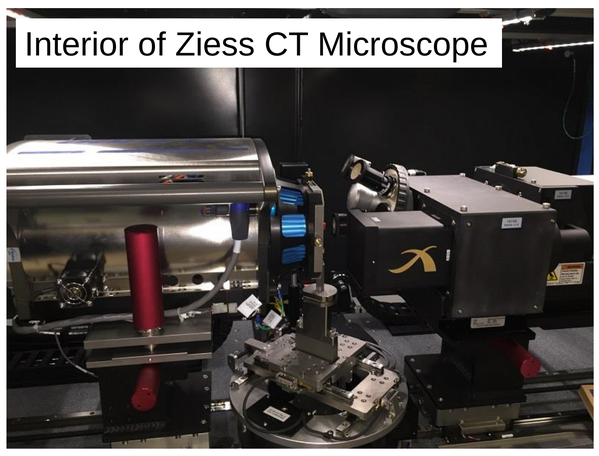
Challenges

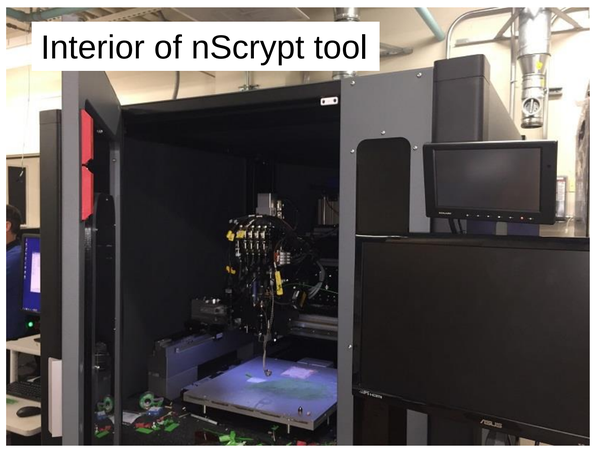
- **Integrate soldier-relevant sensors and control electronics on soldier-borne platforms**
- **Electronic interconnects in 3D plastic structures**
- **Developing novel sensor platforms**

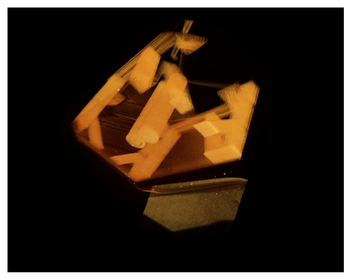


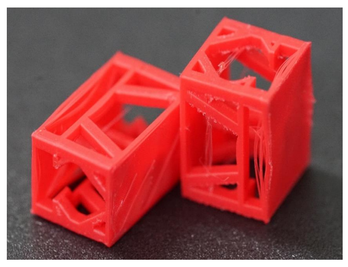
Translating Die and Sensor interconnect packaging into 3D printed Structures

ARL Facilities and Capabilities Available to Support Collaborative Research









Initial Printed Structures and 3D Computed Tomography x-ray scans

Complementary Expertise / Facilities / Capabilities Sought in Collaboration

- **Collaborative research in printed materials**
- **Complimentary Brookhaven National Lab beam line to study the metal interconnects and metal migration**
- **3D Product Design Kit**
- **Combining collaborative research areas of common interest to develop 3D Hybrid sensor devices**

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