NextFlex Topic PC-2.3

Conformal Printing of Conductors and Dielectrics onto Complex 3D Surfaces

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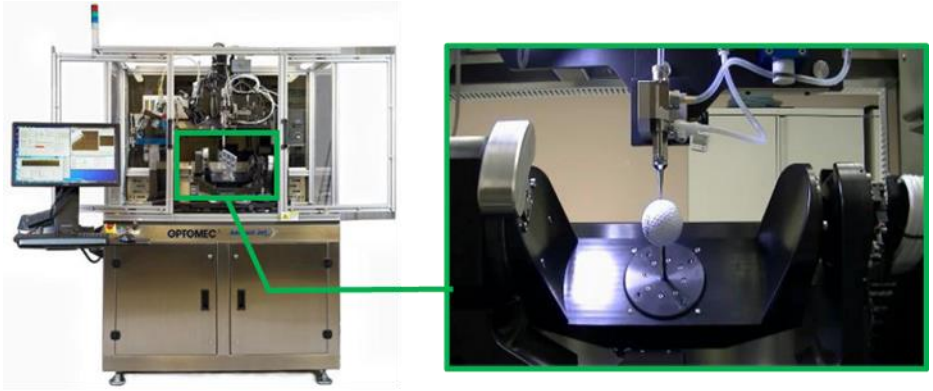
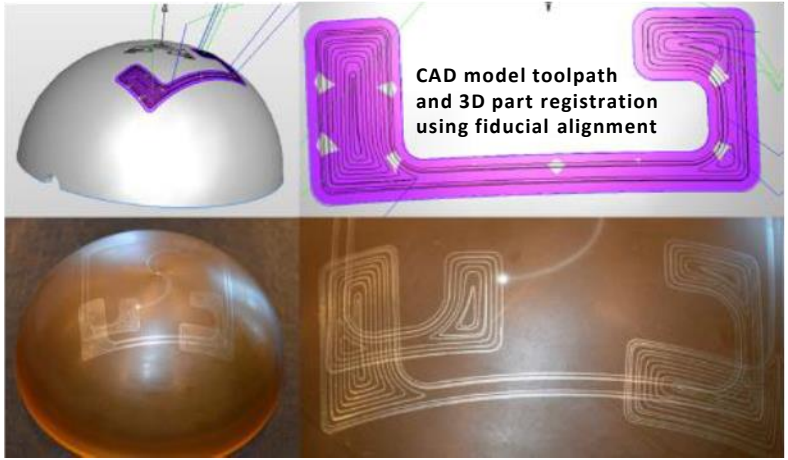


Optomec AJ5X (5-Axis) Aerosol-Jet Printer

Objective:
Enabling 3D conformal electronics by advancing tooling, software and processes to deposit functional materials on complex 3D geometries

Deliverables:
- Pilot-lines to be installed at the San Jose NextFlex site and Binghamton NY node site using the Optomec AJ5X 5-axis Aerosol Jet print system with 10µm feature size and 10µm repeatability
- Software to generate high-fidelity 3D toolpath from CAD model import and program control of a multi-axis drive motion printer
- Industry demonstration articles will include conformal sensors, 3D antenna structures and non-planar circuit routing



Process Work:
- Printing over complex curvatures, 3D steps and sloped geometries
- Use of nano-Cu inks from Intrinsiq Materials and Lockheed Martin
- Alternate ink sintering; Low-Temp, Photonic, Laser, Reducing Atm
- Comparison to installed nScrypt printers at UMD and ARL-Adelphi