

# MICROELECTROMECHANICAL SYSTEMS (MEMS) AND PHOTONICS DEVICES

## Fast-paced research and development for tomorrow's technology

Often the attention-grabbing technologies in aerospace and defense are on a large, eye-catching scale, like rockets, aircraft, satellites. But they are driven by systems that are small – measured in micrometers – or involving light waves, decidedly not easy to notice. L3Harris is at the forefront of these capabilities with the MEMS and Photonics Devices (MPD) group that specializes in extreme miniaturization using semiconductor design and microfabrication processes.

### MICRO-NANO RAPID PROTOTYPING

L3Harris process engineers working at government-funded state-of-the-art cleanroom facilities provide the unique ability for inexpensive fully in-house rapidly developed solutions from chip-level die design to wafer-level packaging. Turn-around time as quick as one week compared to foundry often requiring six months or more at three times the cost.

### SEMICONDUCTOR MICROFABRICATION

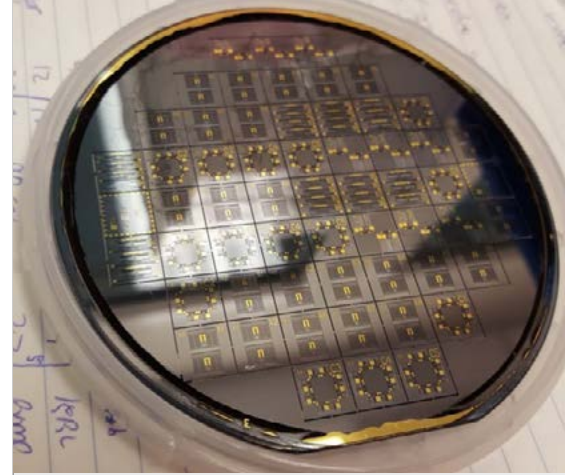
L3Harris provides a full array of foundry semiconductor fabrication tools, including:

- > Lithography
- > Metrology
- > Deposition
- > Dry etch
- > Wet etch
- > Atomic Layer Deposition
- > Thermal oxynitrides
- > Silicon
- > Si3N4
- > SiO2
- > SiC

- > 40+ metals E-Beam lithography and processing
- > LiNbO3
- > InP
- > GaAs processing

### COLLABORATION

The MPD group works with other scientists and engineers at L3Harris to introduce chip-level SWaP reductions to their systems. The group is available to help model and design microsystems and then develop the microfabrication processes needed to make the system a reality. It is also available to assist the photomask design and layout, multiphysics modeling or full system creation including wafer or chip microfabrication.



### BENEFITS

- > On-site process engineers provide immediate feedback throughout fabrication
- > Fully in-house team enables rapid concept-to-test development cycles
- > 70-plus cutting edge microfabrication tools without the maintenance fees maximizes value
- > Photolithography mask creation, direct write lithography or E-beam lithography enables a wide range of MEMS & photonic devices
- > Ability to process piece parts up to 200 mm wafer lots to accommodate one-off research and development projects up to low-rate initial production