

Processing Considerations

When Polishing PICs & Optical Waveguides



Processing Challenges



Repeatable Component Loading



Fixture Alignment and Calibration



Polishing and Process Control



R&D to Production

Repeatable Component Loading

1

PIC & Waveguide Fabrication Issues

- Die cut quality
- Epoxy deposition

2

Clamp Design

- Varying chip dimensions
- Fixture material and physical contact points

3

Reference Positioning

4

Carrier approach for micro-components

- Video-assisted loading



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1

Sample Orientation & Handling

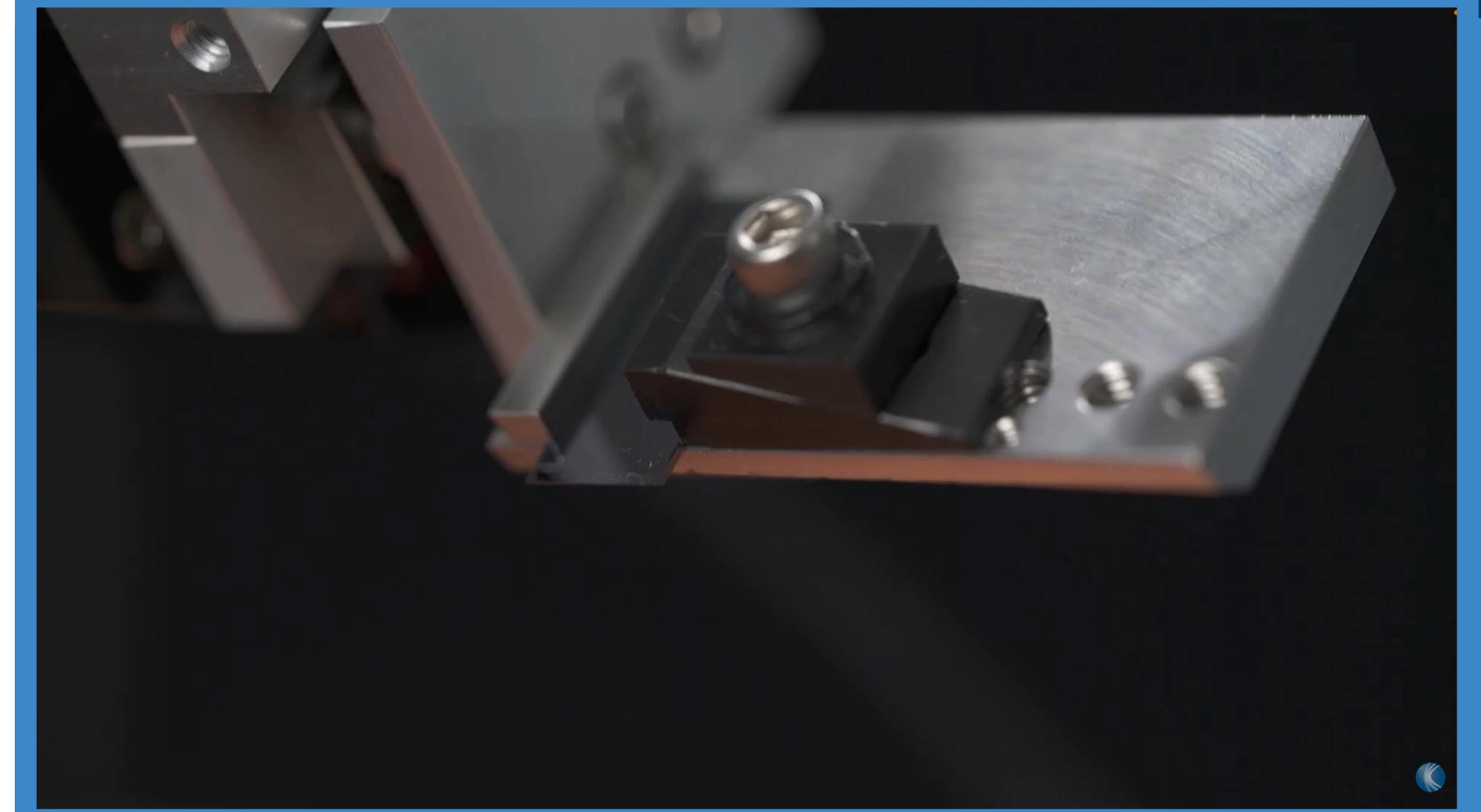
- Variable angles
- Multiple facets
- Multiple endfaces

2

Passive vs Active Alignment

3

Independent Suspension



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Polishing and Process Control



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Parameter Control – Pressure, Speed & Cycle Time

2

Motion Control

- Incremental sample advancement
- Micron-level positioning

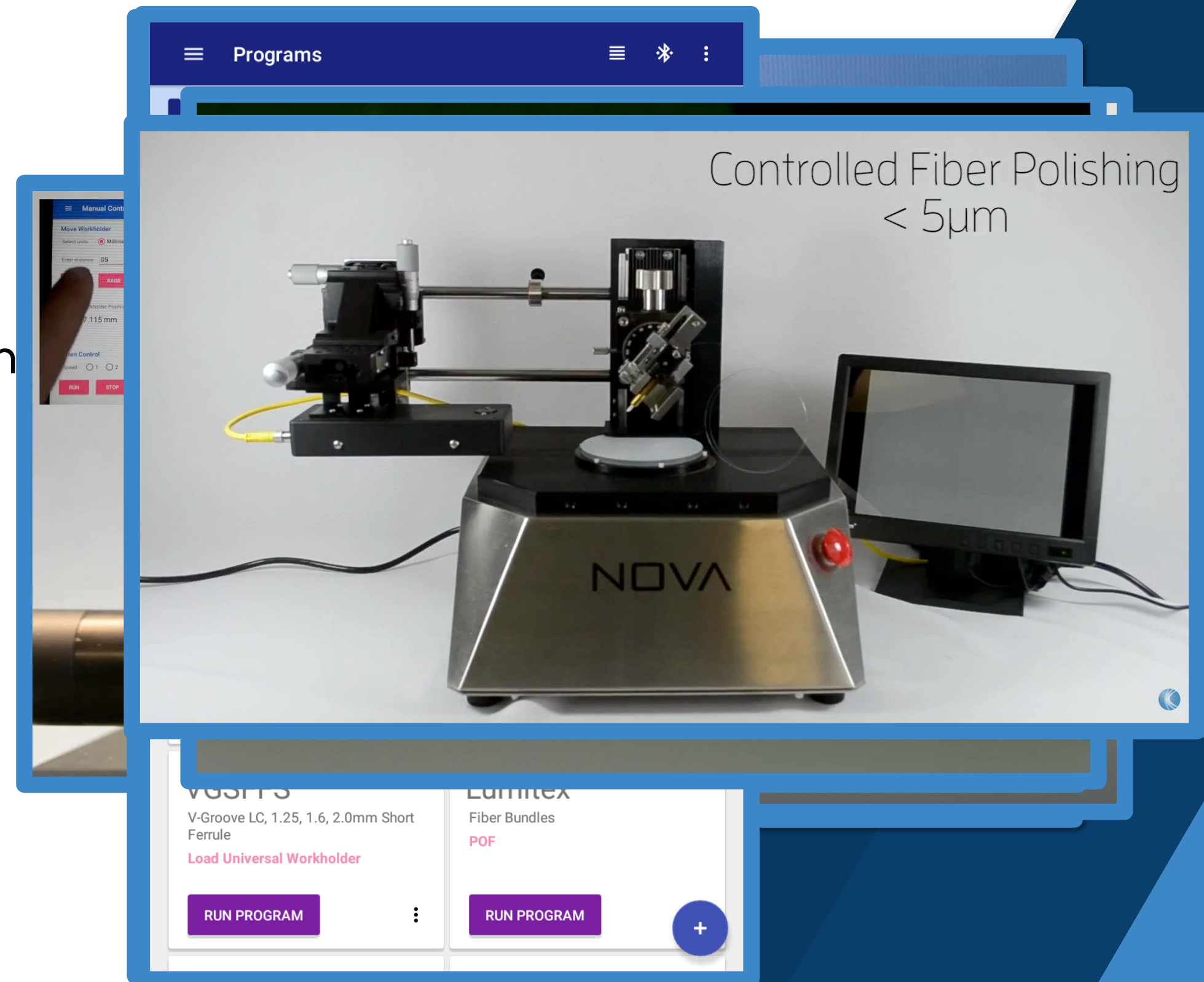
3

Film/Surface Types

4

Video Monitoring

- Real-time view
- In-line surface inspection
- Geometry confirmation



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1

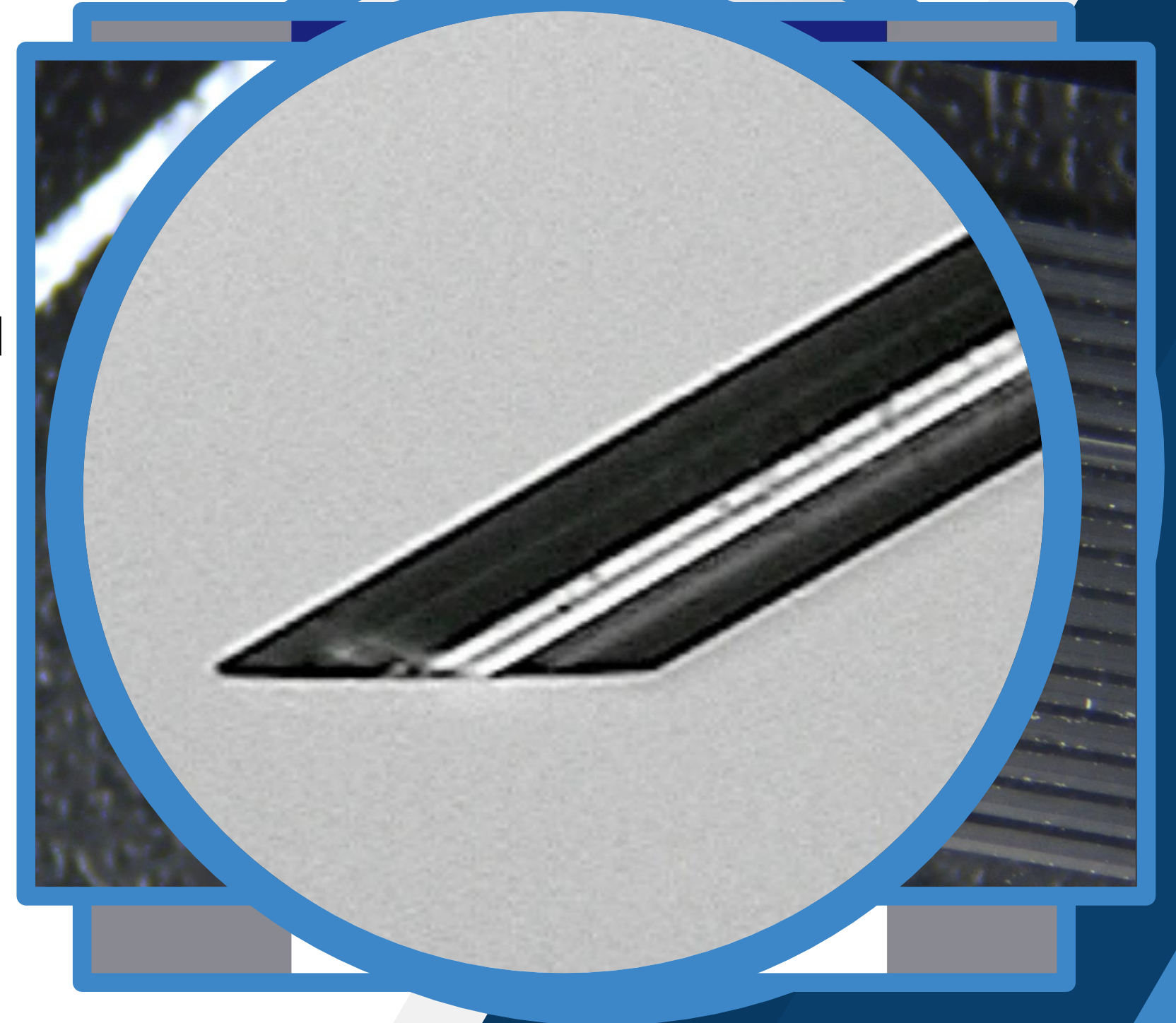
System Scalability

- Multiple component polishing
- Manual operation to programmed modes

2

Interconnect Device Support

- Fiber arrays, terminated chips
- Shaped and lensed fibers



NOVA™ - the Workcell Solution

- ◆ **Integrates Polishing & Inspection**
- ◆ **Configurable & Module Fixture Design**
- ◆ **Flexible and Intuitive Software Platform**
- ◆ **Address the PIC challenges**

See NOVA™ at the AMS Technologies
Booth B2.203

