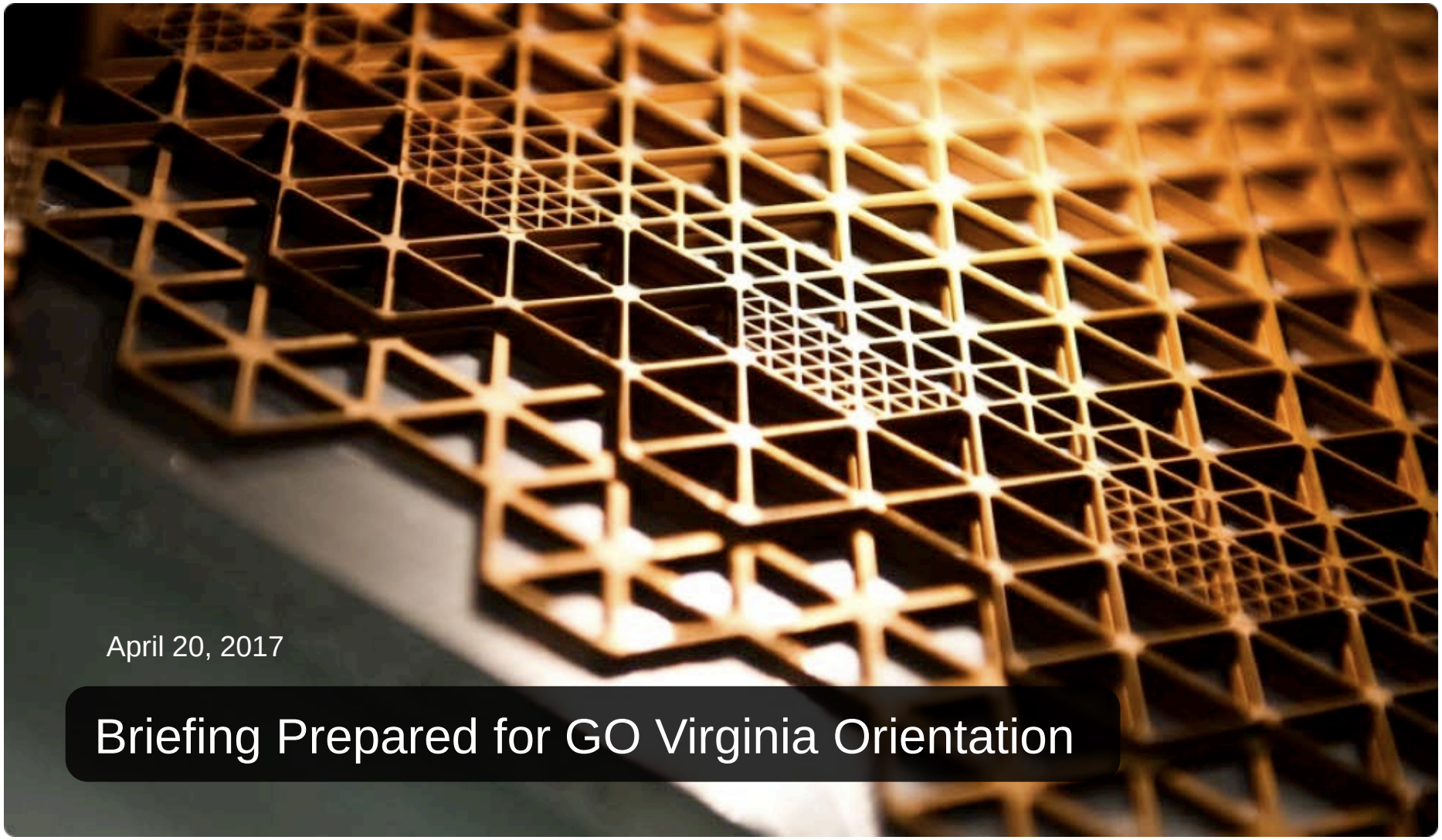


April 20, 2017

Briefing Prepared for GO Virginia Orientation

Mikro partners with global, high technology manufacturing companies to apply its breakthrough TOMO process to create high performance products and improve their product development and manufacturing processes.

MIKRO℠
MAKING IT POSSIBLE

Mikro is all about advanced manufacturing technology

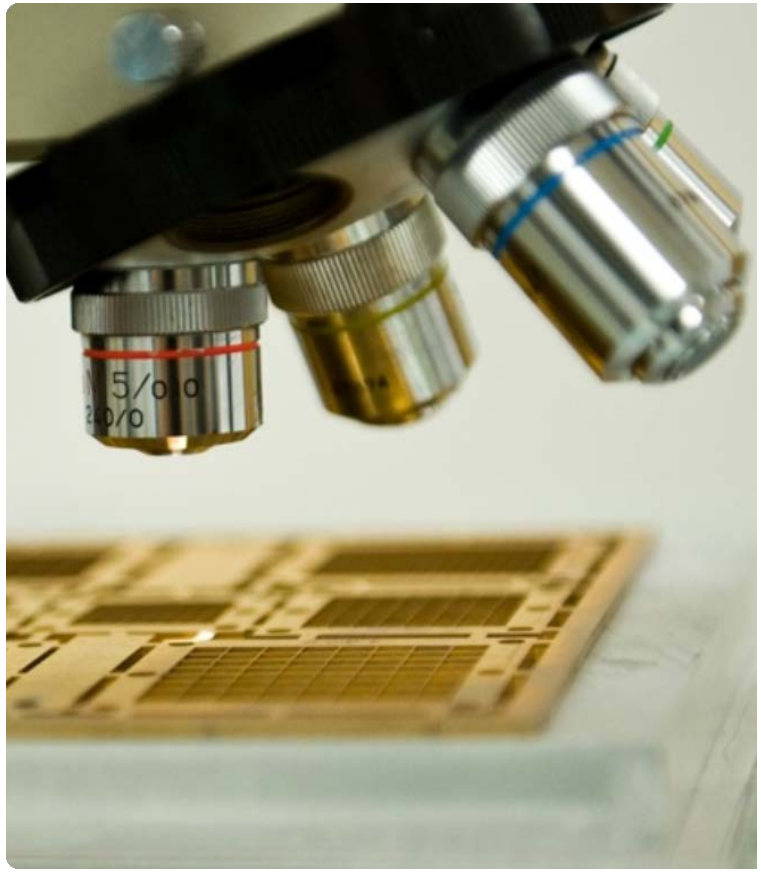
Tomo-Lithographic-Molding (TOMO) – precision molding and casting

- Our materials and process technologies enable

  •Higher performance products (outside the box)
  •Faster development cycles
  •Competitive advantage and strategic value for our customers

Company Background

- **History**
  - Started Operations January 2001
  - In Charlottesville, VA
  - 3 employees
  - Facility - 2500 square feet
- **Currently**
  - 90 employees
  - Facility - 30,000 square feet
- **Operations (~1/3 each)**
  - Commercial product manufacturing
  - Commercial Engineering development
  - Government sponsored R&D (SBIR)
- **Markets**
  - Medical
  - Energy components
  - Aerospace components



Medical Imaging

Anti-scatter grids for multi-slice CT scanners

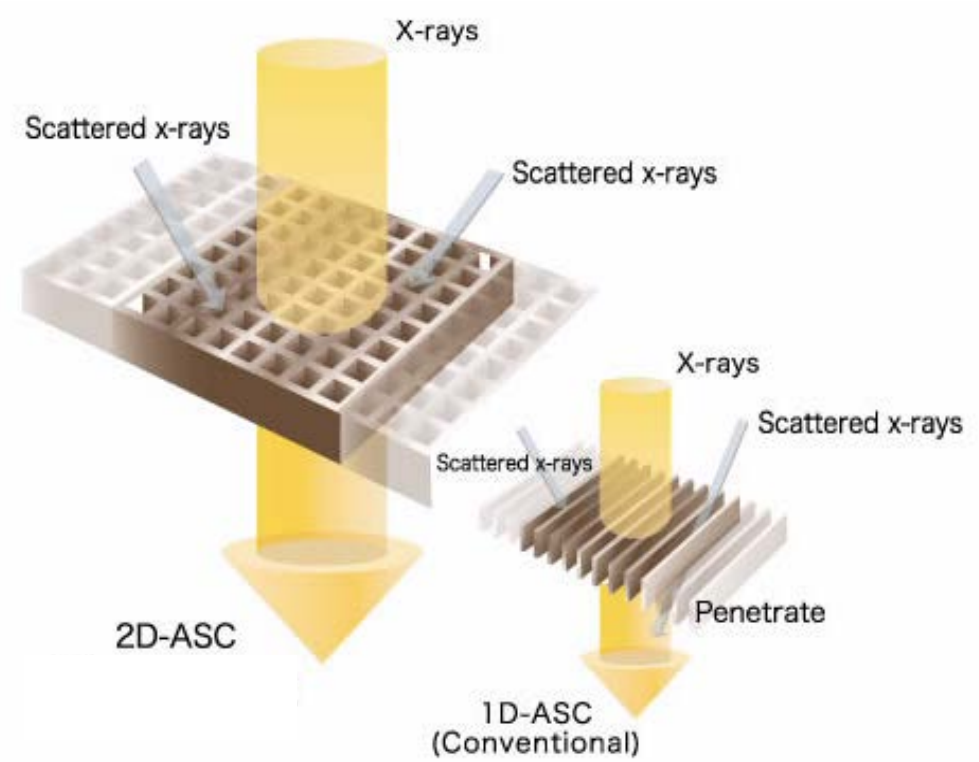
Anti-Scatter Grids

Benefits

•Previously unproduceable design

• Higher performance
  •Sharper image
  •Lower radiation dosage

• Lower cost



Commercialization

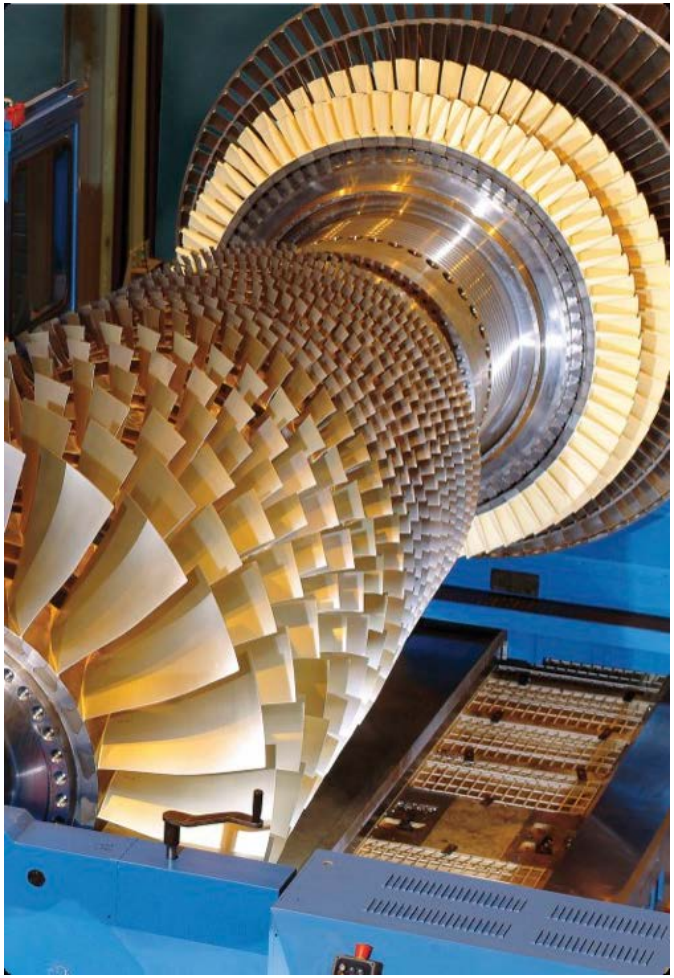
• Mikro currently producing 50,000 units per year

• Scaling the TOMO process to 120,000 units per year

ENERGY
Turbines – Land Based IGT (Power Generation)

Ceramic Cores for Casting Advanced Turbine Blades and Vanes

- Developed rapid prototype and development capability for new components
- Reduced lead time and tooling costs for ceramic cores and wax patterns by factor of 3
- Reduced overall cycle time for the development of new components by factor of 4
- Commercial license agreement with Siemens Energy for IGT cores and wax patterns
- New Siemens factory in Charlottesville has been constructed under license agreement



Aerospace
Turbine Engine Components

- Working with all the major players
  - AF, Rolls Royce, GE, Pratt & Whitney
- Focused on next generation advanced turbine blades
- Genedge and CCAM involvement under M-TAC Program

Customers

SIEMENS

Rolls-Royce

Pratt & Whitney
A United Technologies Company

LOCKHEED MARTIN

PHILIPS

AREAS OF ASSISTANCE FROM GENEDGE

- Quality Systems and ISO Training
- Statistical methods / tolerances to determine process capability and negotiate product specifications
- Value Stream Mapping existing and new product lines
- Supply chain management
- 5S Visual Workplace Training and Implementation
- Failure Modes Effects Analysis (FMEA)
- Root cause analysis (fish bone)
- Control Plan for maintaining improvements achieved
- LEAN Project Management fundamentals
- Critical Chain Project Management (CCPM)
- Fundamentals of Lean Manufacturing Workshop and Simulation
- ISO 9001:2015 Transition
- Cyber-Security Pilot Program

Latest Impact Analysis showed savings to Mikro > $500,000

LESSONS LEARNED

- Genedge offers very professional, high quality assistance at an affordable price

- Demonstrated large payback potential
  - Efficiency gains
  - Higher yields
  - Better use of personnel
  - Avoiding unnecessary capital expenditures
  - Keeping up with the latest ISO and Government Standards