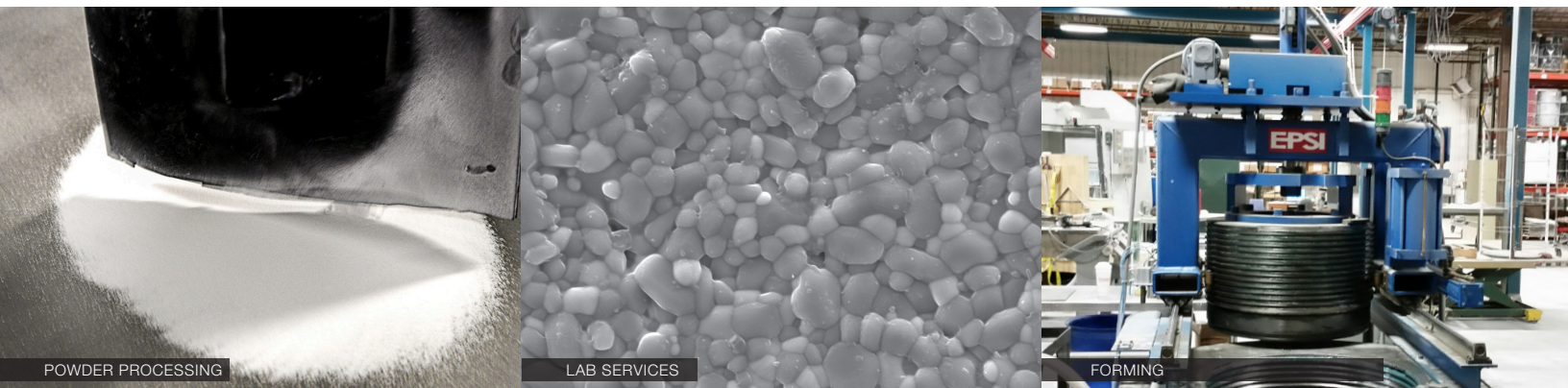


TOLL SERVICES FOR ADVANCED MATERIAL, PROCESS & PRODUCT DEVELOPMENT

ECCL offers our industry leading materials processing expertise and equipment to customers and partners to support development of advanced products.



Powder Processing

- Fully equipped in-house laboratory for powder process validation
- Binder System development
- Ball/Bead/ Vibro milling and spray drying
- Batch sizes from 10 to 3,000 Kg

Lab Services

- Thermogravimetric Analysis & Differential Thermal Analysis
- Porimeter
- Surface Area & Powder Size Distribution
- Scanning electron microscopy & energy dispersion spectrometry

Forming

ECCL offers a full range of forming methods:

- **Mechanical / Hydraulic Pressing:** From 2 Ton to 750 Ton
- Fired sizes up to 12"Ø
- **Isostatic Pressing:** Pressures up to 40k psi
- Fired sizes up to 22" Ø and 40" lengths
- Extrusion of complex geometries up to 2" OD
- Low Pressure Injection Molding



Green Machining

- Manual and CNC milling and turning
- 5 axis CNC machines for complex geometries
- Max sizes:
 - Diameters up to 25" and lengths up to 48"

Sintering

- Gas and Electric Periodic Kilns (up to 1700°C)
- 300 cu ft. of natural gas fired kilns
- 7 electric kilns, 3 tube furnaces
- Full support of kiln cycle development and documentation

Diamond Grinding

- Full CNC capabilities for:
 - Cylindrical Grinding (ID/OD)
 - Surface Grinding
 - Vertical Milling
 - Reaming and Honing (manual + CNC), Lapping and Polishing
 - 5 Axis CNC machines for complex geometries
 - Max capacity 16" Dia to 40" length; tolerances <.0001"
 - Fully integrated CAD/CAM and digital inspection
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