



Foster Rush

Leading Edge Materials
Technology Consulting

Company Profile

Foster Rush

Specializing in Electronics, Nano Technology and Clean Tech



Core Competencies

➤ *Foster Rush is dedicated to helping companies achieve sustainable growth and profitability through the commercialization of innovative materials technology*

- Raw Material Selection
 - Raw Material Development
 - Risk Analysis & Mitigation
 - Emerging Technology Assessment
 - Clean Technology Development
 - Electronic Component R&D
 - Component Failure Analysis
 - Corrective Action Plans
 - Process Development & Eng.
 - SPC, PFMEA, DOE, Lean Tech
- Strategic Marketing
 - Project Management
 - Business Development
 - New Product Development
 - Technology Road Mapping
 - Merger & Acquisition Facilitation

Technical & Materials Expertise

- Expertise in ceramic, metal and glass technology for:
 - Electronic & Structural Ceramics
 - Nano-Technology & Clean Tech
- Sales representation and product line management;
 - Specialty Powders
 - Raw materials: barium titanate, titanate additives, multi-component oxides
 - Ceramic dielectric & metal powders
 - Inks & pastes
 - Terminations & internal electrodes
 - Sealing glass & adhesives
 - Passive Electronic Components
- Specialty test & fabrication equipment
 - Electronic test & characterization
 - Multilayer component fabrication

Business Expertise

- *Skilled in creating technology driven manufacturing and research and development organizations*
- All phases of the business life cycle
 - Startup
 - Expansion / Contraction / Turnaround
 - Reengineering
 - Acquisition / Merger / Assimilation
- Business position assessment
- Tools for turnaround and growth
- Benchmarks to measure performance
- Technology and business analyses for investment opportunities
- Business development for start up ventures
- *Extensive experience in all areas of product line management including P&L responsibility*

Hands-on Experience

- Manufacturing process engineering
 - Process Development
 - Process Troubleshooting & Stabilization
 - Process Improvement & Yield Improvement
- Applications engineering & Technical service
- Product design, development, characterization & marketing

Supply Chain Development

- Leveraging relationships and network in Asia
 - Greater China, Korea and Japan
 - Facilitating the commercialization of stranded technology in NAFTA and Europe
 - Providing the framework to outsource non-value added operations
 - Enabling toll manufacturing or customized material fabrication
 - Rare earth raw materials and precursor ceramics

Market Development

- Development of new markets for common technology platforms
 - Renewable energy
 - Smart grid
 - Drug delivery
 - Automotive
 - Clean tech
 - Medical & Military

Technology Development

- Facilitating technology development partnerships
 - University/National Lab/Industry
 - Federal stimulus funding
 - State supported job creation grants and incentives
- Strategic plan development and tactical plan deployment

Electronic Market Segments

- Multilayer ceramic capacitors
- Multilayer inductors & varistors
- High Frequency Capacitors
- Microwave Resonators
- Multilayer actuators, transducers and haptics devices
- Low temp & high temp co-fired ceramic packages
- Modules
- MEMS sensors
- Touch screen displays
- Thick film systems
- LED

Nano-Technology Markets

- Print electronics
- Drug delivery
- Coatings
- Composites
- Emerging Dielectrics

Clean Technology Markets

- Solid oxide fuel cell
- Advanced battery
- Solar
- Wind

Multilayer Ceramic Component Prototyping and Process Development

- Clean room facility with complete fabrication line for multilayer ceramic component construction
- Raw material selection and tape casting formulation development
- Doctor blade coating on PET carrier film, 10-100 micron cast thickness range
- 8 tool computer-controlled punch for vias and cavities
- Vision aligned screen printing and stacking
- Isostatic lamination
- Automated cutting machine, carbide blade guillotine type

Multilayer Ceramic Component Prototyping and Process Development

- Partial listing of prototype devices fabricated:
 - Multilayer ceramic capacitors (MLCC), precious metal and base metal types
 - Multilayer chip fuses
 - Micro actuators
 - Stacked plate linear actuators
 - Multilayer piezoelectric transducers
 - Sensors
 - Multilayer chip inductors and filters

Key Affiliations

- Fujikura Kasei Co., LTD.
 - Electrically conductive polymer and epoxy pastes
- Daiken Chemical Sales and Manufacturing Co., LTD.
 - Precious metal and base metal powders and pastes
- Outlook Industrial LTD.
 - Chip component fabrication and test equipment
 - Rare earth raw materials
- Rokem Technologies
 - Custom test and measurement equipment
 - Automated assembly equipment design & fabrication
- Primet Precision Materials, Inc.
 - Metal, metal oxide and glass nano-engineered powders
- Charge CCCV LLC
 - Li ion battery materials solution provider
- Alfred University Center for Advanced Ceramic Technology
 - Materials characterization, design and synthesis
- IncubatorWorks, Alfred New York
 - Multilayer electronic component design and fabrication, contract research