

RESULTS YOU CAN MEASURE

New Product Assessment - MinoTech Engineering was engaged to provide an assessment of new product opportunities on behalf of a client wanting to evaluate applications for excess MEMS foundry capacity. Our client is a leading provider of photonic switching systems and software.

Product Development, Life Sciences - New patent pending life sciences applications are being developed that will open new markets and opportunity for top and bottom line corporate growth.

Vendor Process Improvement - MinoTech Engineering collaborated with vendors to develop an improved fiber optic interrogated biochip product that met specifications, enabling the firms core technology.

Patent Mining - Over 92 patents were reviewed by MinoTech Engineering to determine potential for licensing value and identify possible infringement.



Fuel Cell Analysis - A manufacturing strategy analysis was undertaken to determine feasibility and costs to produce an innovative fuel cell product. The study enabled the next round of VC investment.

New Product Development Photonics - A low cost automated manufacturing process for fused biconic taper (FBT) couplers and WDM's was developed and implemented for deployment in Passive Optical Networks. Fiber stripping, fusion heat treatment, assembly, epoxy bonding, packaging and process optimization issues were addressed.



Business Process Optimization - Organization was restructured to focus efforts on enhancing world wide sales and technical support for existing products, generating cash flow needed to fund development of highly anticipated new product line.

ASK US FOR REFERENCES!

PRINCIPALS

Dr. Michael J. Minot, Senior Consultant and Founder of MinoTech Engineering. Prior to launching MinoTech Engineering, Dr. Minot served in senior executive capacities, including VP R&D and VP Manufacturing Engineering for technology based advanced materials start-ups that successfully went public. Previously he spent 15 years with Corning Inc. in a variety of senior positions in Manufacturing, Engineering and Research & Development, including the scale-up of fiber optics manufacturing.

Dr. Arnon M. Hurwitz, Senior Consultant, concentrates his practice on industrial statistics, drawing on experience and expertise in the semiconductor, fiber optics, and petrochemical industries. He also teaches principles and application of statistics, including DOE, Statistical Process Control and Effective Data Analysis.

Dr. David W. Stowe, Senior Consultant, is recognized for his expertise with passive photonic devices and is widely credited with the commercialization of fused biconic couplers. Previously, he was in senior technical leadership positions with Aster Corp., Porta Systems Inc, Augat, Thomas and Betts, FONS Corp., and Gould Inc. He received the 'R&D Top 100 Photonic Products Award' in 1985 & 1999.

Dr. Dau Wu, Consultant, concentrates his practice on Product and Process Development and Manufacturing Improvement for fiber optics, sensors, and optical MEMS switches. He has a record of accomplishment in fiber manufacturing, including plasma deposition, hermetic fiber coating, MM bandwidth optimization and development of optical sensors.

Mr. William R. Tamm, Consultant, focuses his practice on telecommunication and specialty optical fibers, components and applications. He has extensive direct experience in the design and installation of MCVD systems, fiber draw equipment and terminations for high power laser fiber systems utilizing large core MM fiber.

Dr. Qing Ye, Consultant, concentrates her practice on Product and Process Development and Manufacturing Improvement, focusing on specialty fibers, fiber amplifiers, and lasers. She has extensive experience in fiber processing, measurement, linear and nonlinear optical materials, high power optical components, and design and prototyping of DWDM systems.

Mr. Edward W. Perry III, Consultant, provides process and equipment engineering services to manufacturers of telecommunication and specialty optical fiber. He is experienced with high performance fiber lasers, fiber amplifiers, specialty optical fiber, novel optical products, and high speed fiber draw technology. Mr. Perry has applied SPC, DOE, 6-Sigma, Pareto, Root Cause Problem Solving and Project Management to fiber optic manufacturing problems.

MinoTech Engineering, Inc.

FIBER OPTIC MANUFACTURING CONSULTING

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MinoTech Engineering™ Inc.
provides R&D consulting services
to technology based
manufacturing organizations.
We provide scientific technical
development, product
development, and technology
transfer commercialization
services.

OUR SERVICES

- Product & Process Development
- Process Optimization
- Technical Problem Solving
- Analytical Services
- Experimental Design
- Design & Prototype Fabrication
- Technology Transfer & Commercial Development
- Project Management
- IP Management & Licensing
- SBIR Funding
- Business Process Optimization

TECHNOLOGIES SERVED

- Life Sciences
- **Fiber Optics Manufacturing**
- **Specialty Fiber**
- **Passive Components, Sensors**
- Fused Silica Glass Manufacture
- Optical Coatings, Large Optical Mirrors
- Portable Energy, Advanced Batteries & Fuel Cells
- Advanced & Electronic Materials
- Semiconductor Manufacturing, DOE, Process Control

FIBER OPTICS MANUFACTURING

Our teams of fiber optic manufacturing engineers and scientists have extensive experience with all facets of fiber optic, specialty fiber and photonic device manufacturing.

- **Glass Fabrication**
 - ◇ Deposition
 - ◇ Modified Chemical Vapor Deposition
 - ◇ VAD Core Preform Manufacturing
 - ◇ Overcladding
 - ◇ Sintering & Consolidation
- **Fiber Draw**
 - ◇ Proof Testing & Rewind System
 - ◇ Deuterium Treatment
- **Fiber Measurement**
- **Rewind**
 - ◇ Color Coding
 - ◇ Ribbon Fabrication

SPECIALTY FIBER

Our consulting team has broad design and implementation experience to assist manufacturers wishing to optimize product for diverse applications:

- Specialty Telecommunication Fiber
- High Strength & Adverse Environment Fibers
- Device Applications
- Instrumentation, Medical, and Sensor Applications
- Holey fibers, Plastic Optical Fiber

OPTICAL COMPONENTS & SENSORS

Our team includes world class experts with passive components such as couplers and splitters. We can help you design and implement custom product that meet your specialized needs, as well as to assist you with routine manufacturing and automation issues:

- Fused Biconic Couplers
- Coupler Based Devices
- Connectors, Terminations, Cable Assemblies

SCIENTIFIC TECHNICAL DEVELOPMENT

provides your organization with a competitive edge. You will work with an experienced technical team that has a track record of success doing technical development. Our consultants work with your organization, develop innovative products and processes, and insure that they are successfully commercialized.



Through our '**insource**' program, companies leverage their existing resources without hiring additional personnel. **We pride ourselves in our ability to provide outstanding process and equipment engineering services to manufacturers of fiber optics.** Our consultants work 'hands on' at your facility, providing leadership to help your personnel develop new products and improve your manufacturing process.

This approach is particularly attractive as companies, hurt in the technology downturn, begin to see signs that their markets are slowly coming back.

MinoTech Engineering™ Inc. provides comprehensive **DESIGN & FABRICATION SERVICES**, coordinating the commercialization process from initial concept, process development, prototype, pilot production, through full manufacturing. Our affiliates include:



- RenTec Process Piping Systems
- Connor Engineering Solutions