



**Materials Innovation Technologies, LLC**  
**Summary Business Plan**  
May 2005

**EXECUTIVE SUMMARY**

Materials Innovation Technologies, LLC is committed to developing innovative technical solutions for emerging technologies. The information included in this Summary Business Plan includes concise descriptions of our enterprise and organizational structure; and the markets, their needs and our proposal for satisfying those needs.

**Mission Statement**

Materials Innovation Technologies, LLC will be a premier solutions provider of emerging technologies.

**The Enterprise**

Materials Innovation Technologies, LLC is a business development enterprise that fuses the knowledge, expertise and procurement of advanced materials, innovative manufacturing methods, ancillary services and commercialization scale-up engineering. MIT is creating and coordinating collaborative partnerships to facilitate commercialization of emerging technologies. Our comprehensive solutions are targeted to meet the emerging technology needs of: alternative energy; aerospace and defense; environmental; thermal management; medical; and engineered components.

**The Market**

Our comprehensive solutions are targeted to meet the needs of the emerging technology industries of: alternative energy (fuel cells); aerospace and defense (lightweight, low cost complex shapes); environmental (diesel engine catalytic conversion); thermal management (advanced heat exchangers); medical (orthopedic implants and devices); and engineered structural components (automotive B pillar post).

The markets targeted are known to generate revenues in the billions. They also address some of the most critical needs of humanity – now and for the future. For example, the commercialization of fuel cell technology will have incredible positive implications upon our dependency of foreign oil and our environment.

Before emerging technologies can move to commercialization, many technical challenges must be identified and solutions developed. Solutions need to happen fast, be of the highest quality, be cost effective, and lead to a pathway to full-scale production within target costs.

We believe that Materials Innovation Technologies, LLC will succeed as a premier solutions provider for these emerging technologies.

## **The Offerings**

The bipolar plate for fuel cell stacks provides one of the best examples of the products and services that will be offered by Materials Innovation Technologies, LLC. As one of the critical components of fuel cell technology, the need exists for a highly electrical conductive material to form a plate with a complex flow field pattern on each side. The materials and the processing for this bipolar plate must be scalable to very high volumes (1M plates/day) at a very low cost (DOE target of \$2.00/plate). Currently, conventional materials and processes do not meet the technical specifications, and are too costly to produce.

For Materials Innovation Technologies, LLC, there is tremendous opportunity in the above example of fuel cell technology for the alternative energy sector. We can create a technical solution within our collaborative partnerships in advanced materials, tooling and mold building, molding manufacturing, equipment fabricating and scale-up engineering that will allow us to provide a scaleable, affordable and effective product for the emerging technology.

By coordinating the technical solutions to enable commercialization in a variety of emerging technology industries, Materials Innovation Technologies, LLC will serve as the single entity for comprehensive, turnkey project management. It is our objective to be the most responsive and cost effective producer of materials, components and or sub assemblies to facilitate commercialization of emerging technologies.

## **ABOUT MIT**

Materials Innovation Technologies, LLC (MIT) is a Limited Liability Corporation established to develop solutions to the technical needs of emerging industries. By coordinating the technical solutions to enable commercialization for a variety of emerging technology industries, MIT will serve as the single entity for comprehensive commercialization solutions.

Collaborative partners with MIT will include a premier tool, die, mold and machine shop; a unique molding production facility; a machine designer/fabricator; a marketing product development company; and a scale-up engineering group. In addition, key collaborations include advanced materials companies, national labs and research universities.

Our short-term goal is to successfully complete existing proof of concept grant work, while our long-term goal will be to position MIT and our collaborative partners as key developers and suppliers to emerging technology industries.

## **MIT MANAGEMENT**

The MIT organization will have a totally “customer-centric” operating approach and management style. While our end products may be items developed to advance emerging technologies, it is our critical thinking and relationships that will drive our success and customer pull will be our continued focus.

Members of the operating management team of MIT have all been successfully involved in moving products from the idea stage to commercialization, and have extensive experience and success in working with Fortune 100 companies, national labs, university consortiums and securing government grants.

The offices of Materials Innovation Technologies, LLC are located in Hendersonville, NC; however, MIT will be global in scope and much of the project work will be completed at the facilities of our collaborative partners.

### **Profile of Key Personnel**

Jim Stike, Bill Austin, Mike Henthorn and Ed Stike comprise the operating management team of Materials Innovation Technologies, LLC.

#### **JIM STIKE, FOUNDER AND PRESIDENT**

Stike will provide the strategic direction and will be responsible for building collaborative partners, sales, marketing, grant writing, customer interface and general management of MIT. Throughout his career, he has amassed extensive knowledge of emerging technologies and acquired more than 27 years of business experience, including valuable expertise with managing companies and licensing technology, writing and obtaining government grants, negotiating joint development agreements, and earning long-term business contracts with Fortune 100 companies (Alcoa, GM, Ford, United Technologies). He was previously founder and president of J.E. Stike Business Development Solutions. Stike has also held positions as founder and president of Porvair Advanced Materials, founder and president of Porvair Fuel Cell Technology, and vice president of sales with Selee Corporation. He served three years as the Treasurer of the U.S. Fuel Cell Council and was educated at West Virginia University.

#### **BILL AUSTIN, FINANCE DIRECTOR**

As finance director, Austin will be responsible for all treasury and accounting functions for MIT. He has developed extensive knowledge and experience in multiple industries within the areas of finance, treasury functions, and cash management – nationally and internationally – and has had direct, integral involvement in the development and commercialization of new products. Holding the positions of Treasurer and CFO for numerous companies, Austin has also been an incorporator and principal and has provided long-term strategic planning for the growth and success of the entities established.

#### **MIKE HENTHORN, TECHNICAL DIRECTOR**

Henthorn will serve as an invaluable resource for MIT in the coordination of technical

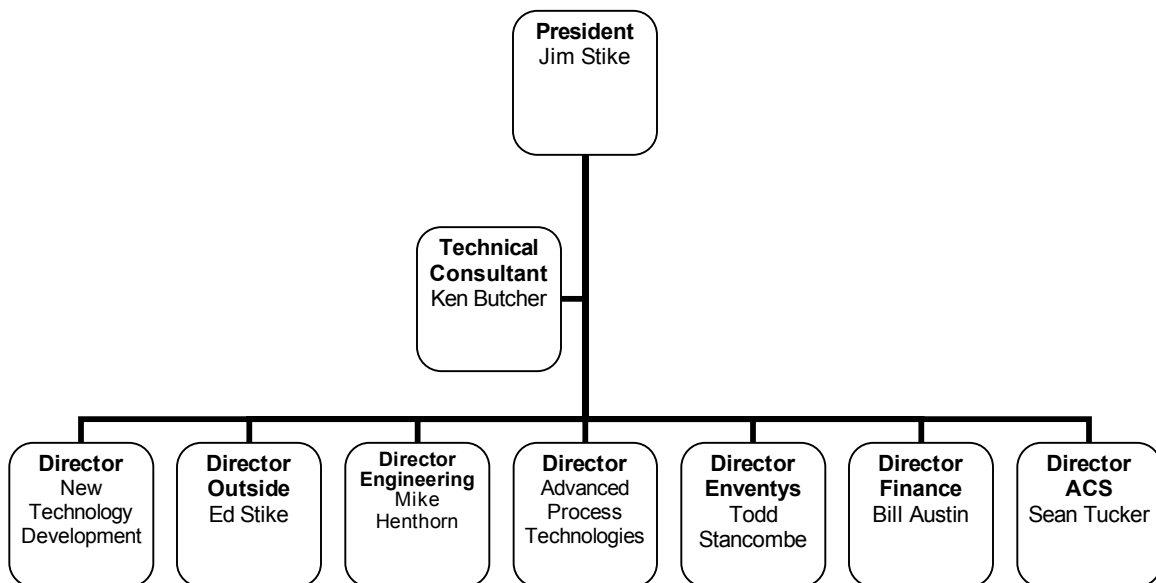
functions and providing engineering support to our collaborative partners. With more than 30 years experience in engineering and production management for large integrated aluminum companies, he has previously held positions as operations manager at Alcan/Pechiney; director of casting operations at Valco (in Ghana, Africa); and business manager for Kaiser Center for Technology, serving six years at Kaiser's Micromill which provided him with international business experience. Henthorn was educated at West Virginia University with a degree in industrial engineering.

#### ED STIKE, OUTSIDE DIRECTOR

Stike, Vice President of Ferris, Baker, Watts Investments, is an articulate, enterprising financial advisor and will act as an outside director and assist in areas of investments. He has over 18 years of successful experience managing over \$100M in assets. He currently leads a private investment team that manages 22 institutional accounts with over \$25M in assets. Stike received his education at Appalachian State University.

### The Organization

The following organizational chart represents the true collaborative anatomy of the MIT organization. With this composition, we can plug-in many collaborative partners to lend the critical skills necessary to provide our clients with the best innovative solution – quickly, responsively and cost-effectively. We expect to win government grants and develop Innovative Products for each of these collaborative partners, and will constantly be on the lookout for interesting technologies to license and develop. We will then hire or contract resources as needed and as defined by the number of grants or joint development agreements in place.



### Advanced Process Technologies

MIT is 50% owner and managing member of this slurry molding company in Fort Wayne, Indiana. APT currently makes speaker cones for the automotive industry.

They also house the research and development equipment to develop lightweight carbon fiber, glass fiber and natural fiber composites.

### **Joint Development Partners**

MIT has created a team of Joint Development Partners to collaborate in developing innovative solutions and providing exceptional responsiveness. Currently, this team includes:

- OCF - Owens Corning Fiberglass
- MFG – Molded Fiberglass
- Composites One

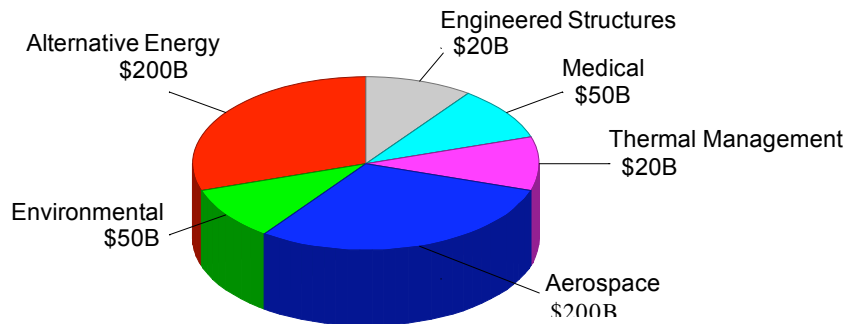
### **MARKET INFORMATION**

Materials Innovation Technologies, LLC has targeted high-potential emerging technologies where the greatest need for our products and services exist. The targets can be defined as “technical people with a problem and the need to investigate a number of cost-effective solutions that will move the development to commercialization quickly.”

The targets are very large and face a wide array of obstacles and improvement needs. They are also the areas where the largest investments are being made from government and large, private sector R&D companies. For example, fuel cells are one segment of the alternative energy market that could potentially be in the billions of dollars. Environmental represents another segment that has been identified by the government as needing significant advancements and breakthroughs. Billions of dollars are spent every year toward R&D efforts for: diesel engine catalytic conversion; lightweight aerospace components; high-efficient heat exchangers; improved bone and joint replacements; and lighter, stronger, cheaper advanced material components.

By developing collaborative partnerships in which everyone has a vested interest for which the potential outcome is enormous – a faster, more effective outcome is possible. MIT offers a results-driven, action-oriented team with the critical skill sets and experience to serve as the single entity to coordinate the best innovative solutions.

## Market Segment Size



### **BUSINESS MODEL**

It is the goal of Materials Innovation Technologies, LLC to bring under one entity, a collaborative solution to technical problems.

One path toward achieving this goal is to review technical topics of governmental agencies that provide grants for technical developments, matching the skills of MIT and its collaborative partners to the needs of the granting organization. Negotiating joint development agreements with emerging technology customers also provides MIT with opportunities to provide technical solutions. In addition, we will represent our partners' products and services to the many contacts we have within the alternative energy, environmental, aerospace and medical industries.

The key components of this offering will be innovation, speed, quality of work and cost-effectiveness. Due to the extensive experience of MIT's management in new developments and commercializing emerging technologies, we serve as a unique and valuable asset to our customers. Our ability to build an organization with collaborations on the development side, combined with our skills in obtaining government grants and joint development agreements on the funding side, allows us to provide a more thorough and cost-effective solution, making technical projects more affordable – and MIT more successful.

## **DEVELOPMENT AREAS**

As an example of the vast and massive opportunities that lie in the field of emerging technology, Materials Innovation Technologies, LLC is currently working in three development areas that could quickly magnify in scope. In the past few months during the establishment of the MIT entity, we have been presented with development prospects in nanotechnology, electric/hybrid locomotives and unmanned aircraft that include:

1. High-volume/low-cost molding of advanced materials in complex shapes. The aerospace and fuel cell industries are both now looking for these breakthroughs to facilitate commercialization.
2. Unique molding of lightweight automotive components.
3. Prototype molds and tools for advanced material molding.

Each of these development areas is synergistic with our strategy to bring materials, tooling and manufacturing together for a winning innovative solution. Government agencies and large corporations are also funding all three areas.

## **OPERATIONS AND PRODUCTION**

The scope of work to be performed under government grants or joint development agreements will be managed by Jim Stike and Mike Henthorn. As the number of projects grows, qualified personnel will be added. In early stages of work, we do not anticipate inventory. As developments are moved into manufacturing and commercialization phases, we will adhere to strict Lean Manufacturing tenets.

Collaborative partner resources will be utilized as needed to successfully complete projects. As representatives of the MIT entity, all collaborative partners will provide high quality products and services and will offer appropriate certifications in quality, ISO, QS, etc. All partners provide state-of-the-art facilities, recognize the need to expand their business and possess the financial resources to expand into new product or new development areas (all facilities are currently not at capacity and will not require a large capital investment to expand). All also employ personnel who welcome the challenges of moving into emerging technology arenas.

Currently, we have collaborated with partners that include:

- Allied Defense Solutions
- Automated Control Systems (ACS)
- Automotive Composite Consortium (ACC)
- Dendritic Nanotechnologies, Inc. (DNI)
- Enventys
- Industrial Composites Inc. (ICI)
- Lyerly Agency
- Mid-States Tool & Machine

Molded Fiberglass (MFG)  
Oak Ridge National Labs  
Owens Corning Fiberglass (OCF)  
Porvair Advanced Materials  
Purdue University  
South Carolina University

MIT has had initial talks with many other potential partners.

Materials Innovation Technologies, LLC prefers that subcontractors be a part of our collaborative partnership structure. However, we recognize that this may not always be possible. In such cases, we will only employ sub-contractors who meet our stringent quality and delivery requirements.

### **Protection Strategy**

Our Innovative Products protection strategy will be one of patents, licenses, development agreements and trade secrets. We recognize that each opportunity to advance commercialization has its own unique set of issues, and we possess the experience in all areas of protection.