

Included is an interview with Brian Morin, President & COO, of Dreamweaver International.

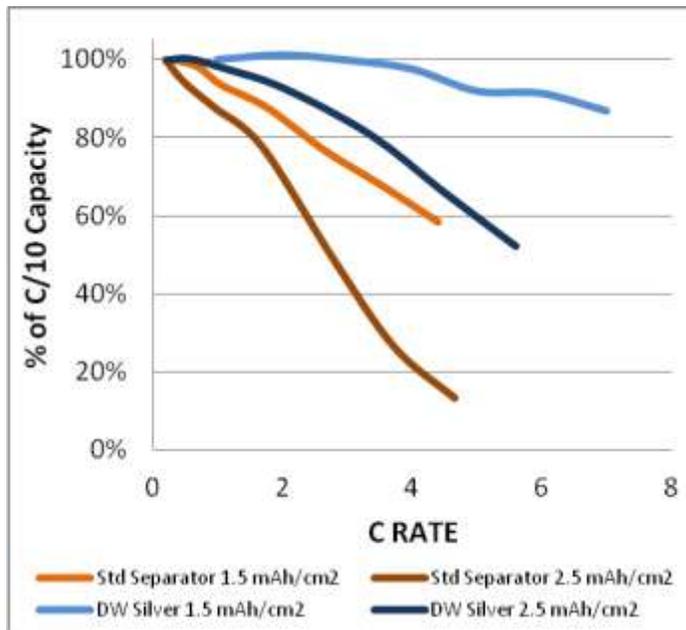
**Describe Dreamweaver International.**

DreamWeaver International, Inc. (DW) is an innovative advanced materials company with unique nanofiber technology, which dramatically improves rechargeable battery performance for use in cell phones, laptop and tablet computers and electric vehicles. Dreamweaver’s mission is to deliver the lowest cost high technology battery separators in the world.

**What differentiates Dreamweaver’s offerings from that of the current major suppliers and other start-ups?**

DW leverages a patent pending nanofiber technology to create a superior separator with distinct advantages:

- **More Power/Faster Recharge:** The DW separator allows higher transmission of ions, improving the power available for electric vehicles, power tools and other high power applications. Higher ion mobility also allows faster recharge.
- **Increased Efficiency:** The DW separator reduces the battery internal resistance, lowering energy dissipation and increasing efficiency.
- **Higher Energy Density:** The DW separator allows more efficient electrode use and reduced electrolyte and current collector, increasing energy density by reducing the amount of inert material.
- **Lower Cost:** The DW separator allows a reduction in overall materials use, decreasing total battery material costs by up to 25% (as much as \$5,000 per EV). Producing DW separators requires 1/20<sup>th</sup> of the capital and far less processing than competitive materials.
- **Thinner, lighter, smaller:** By reducing the amount of other materials needed, the DW separator allows for thinner, lighter and smaller batteries.
- **Safer:** Lithium-ion batteries are stressed at higher temperatures and are sensitive to “dry spots” within the electrolyte material. These problems are lessened due to the higher thermal stability and better wettability of DW separators.



To the left is rate performance between C/10 and 7C for cells made with Celgard 2325 separator and with Dreamweaver Silver 25 separator, each with cathodes loaded at 2.5 mAh/cm<sup>2</sup> and at 1.5 mAh/cm<sup>2</sup>. The Dreamweaver cell with 40% higher coating weight performs similar to cell using more separator and foil. A schedule of materials for these two comparably-performing cells shows a 19% reduction in weight, 25% reduction in volume, and 27% reduction in cost.

**What is the go to-market strategy?**

Dreamweaver's strategy is to sell battery separator to battery manufacturers. We are using carefully chosen partners to help bring the product to market. These partners include:

**Herty Advanced Materials Development Center:** Development of the product was done at the Herty and initial samples have been sent from their pilot line, which could manufacture 5 million m<sup>2</sup>/year.

**Glatfelter:** Larger scale manufacturing will be done with Glatfelter, a \$1.6 billion paper company. They bring our technical, manufacturing and quality excellence to a new level, and will allow us to manufacture hundreds of millions of square meters annually. Glatfelter will be our full-service fulfillment arm.

**CMA Group:** The CMA Group is representing our product in North America, and has three salespeople actively supporting the Dreamweaver effort. They have introduced the product to over 100 customers, have over 50 ongoing evaluations and over 20 customers who are developing prototype cells.

**Dreamweaver Europe/GS Consulting:** A group of seasoned businessmen have founded Dreamweaver Europe to represent our material in Europe, and have made significant progress. GS Consulting has introduced our product into Korea, and it's being evaluated at the largest Korean battery manufacturers.

**Discuss the Teijin and Glatfelter relationships? When do you expect to have commercial product available?**

The Teijin and Glatfelter relationships are both the result of a long and deliberate study in each area.

**Glatfelter:** At the beginning of 2012, we set a strategy to find a partner who could potentially manufacture our material both with far higher quality and also at far higher volumes. Glatfelter at the same time was looking to expand their presence in electronic papers, and so the fit was natural. We expect to be shipping our first product from their plant within a few weeks, with final qualification scheduled for 3<sup>rd</sup> quarter 2013.

**Teijin:** Early in 2012, we began to get requests for a material that would be stable above cathode degradation temperatures, all of which are below 300 C. We experimented with several different aramid materials, and eventually settled on Teijin because of the unique structure of their fibrils. Teijin at the same time has made several advances in making aramid based separators, but had not made one from a wet laid process, and so again a partnership was formed from mutual ambitions coupled with technical success. Prototypes are available now, and we hope to have the material qualified at Glatfelter in 2014.

**The separator market is currently dominated by several companies. How many significant suppliers do you expect to be in the marketplace over the next five years?**

Every customer I talk with has complained about how few suppliers there are and the dynamic that brings to the market. Because of this, it is clear that customers will welcome new participants with advanced technology. There are also new requirements placed on the separator by large format batteries, by supercapacitors and by other advanced electrodes that are not being satisfied with current materials. With both technical and market dynamics driving more suppliers of separator, more entrants are almost inevitable. However, qualification is long, so over the next five years I would expect only a handful of significant suppliers to emerge, with further diversification coming over the next decade.

**Which market provides the greatest growth opportunity for the company?**

In the near term, the first placements of our Dreamweaver Silver™ products will be in industrial applications and in supercapacitors. In both cases, the technical needs are a fit and the qualification times are not as long. In the longer term, we see a big opportunity in automotive for Dreamweaver Gold™ and in portable electronics for Dreamweaver Platinum™.

**What is the current TAM for Dreamweaver?**

Our product is a proven drop-in replacement for existing separators in LFP and NMC cells, which opens up about 40% of the lithium ion market. The rest of the market is mostly untested. Remove from that anything requiring less than 20 microns (advanced portable electronics) and anything automotive (4-6 year development cycle), which leaves about 30% of the \$900 million separator market, or just under

\$300 million as today's TAM, with our Silver™ product. But when you can include what we are developing with Gold™ and Platinum™, you get basically the whole lithium ion and supercapacitor markets, or about \$1 billion today, growing at about 19%.

**How many customers is the company engaged with? Is there a geographic skew?**

Checking my last board presentation, we have sampled 101 customers, and 40 of these have made our "Top Customers" list, on which we review progress every two weeks. Of these 40, almost half are North American, and the others split equally between Asia and Europe. We've recognized that we haven't paid enough attention to the Asian market, and it will be a big push over the next 18 months.

**Please describe the company's financial profile and where it could be in three years.**

Our partners give us extraordinary flexibility. I joked at the last conference when we were announcing our partnership with Glatfelter that this machine (below) could produce over 200 million square meters of battery separator. "But don't be afraid to place an order larger than that," I said, "because they have nine of them!" The total market today is about 600 million square meters. Through our partnerships, we have "hired" 10% of a pilot paper production and engineering team, 5% of a full paper production and engineering team, 10% of a battery test lab, 10% of a paper lab, 10% of a nanofiber development team, 25% of a customer development team—it enables us to assemble an extraordinary amount of talent without having a huge team sitting idle while we wait for the business development cycle to mature.



**Any closing comments?**

After exiting my last CEO job, Jim Schaeffer called and asked, "Have you ever thought about using nanofibers to make battery separators?" My answer: "I think I know what a nanofiber is, but what's a battery separator?" Little did we know that that conversation would spark an opportunity to bring a revolution to the advanced technology battery market—to reduce the cost of a major battery component by 50% while improving the safety and performance and further reducing the cost of the entire battery, to build a whole product line based on a new platform technology. I'm humbled and grateful to work with such terrific talent on a project that will change an industry that is having a huge impact on how we play, how we work, how we travel, and how we live.