

Innovation Takes Root 2010

Review by Michael Thielen



Despite tight corporate travel budgets, 31 exhibitors and more than 300 people from 30 countries attended Innovation Takes Root 2010, the international bioplastics conference hosted by NatureWorks in Dallas, Texas, USA. Meals and the two evening receptions offered excellent opportunities to make or renew connections and to discuss the many interrelated aspects of sustainability, bioplastics processing, and marketing products with low environmental impacts.

Successful integration of PLA into existing manufacturing facilities

In a lively, interactive Q&A session, five industry leaders dispelled prevailing myths around processing Ingeo™, demonstrating with a number of examples of implemented solutions that the equipment industry has moved past the exotic new material phase. Topics covered included, running Ingeo sheet, crystallizing and drying, screw and cooling mandrel technology, biaxially oriented films, and agglomeration reclaiming technology.

New PLA-based product developments

A cross section of leading brands and manufacturers showed the momentum that is now behind the industry drive toward offering high quality consumer products and packaging.

Representatives of Spartech discussed new higher heat resistant sheet stock. Sony described its push to include bioplastics and decrease the fossil carbon content of its plastic components, Clear Lam Packaging not only spoke about its latest portfolio of new products, but also the results of a new consumer study in the USA demonstrating consumer awareness around the renewable theme. Fabri-Kal showed Ingeo cups and discussed production, while Sommer Needlepoint shared inside details on the development of the Ingeo exhibition-grade carpet used at Copenhagen's COP-15 conference, and subsequently recycled into lactic acid (see bM 01/2010)

Additives and blends approaches to tailoring PLA performance

Two technical tracks explored how the latest technologies from leading industry compounders and additive suppliers are taking Ingeo and other bioresins to new levels of performance.

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The compounders PolyOne, Teknor Apex, and RTP described approaches for achieving engineering resin properties with bioplastics through compounding. PolyOne presented its new reSound™ products line which contains a minimum 30 wt % PLA, PHB, PHBV, etc. for applications requiring improved sustainability and higher engineered performance. Teknor Apex described thermoplastic starch (TPS) technology for Ingeo modification, and RTP described compounded Ingeo or biobased PA formulations (32-80% biocontent) as offsets to HIPS, PC/ABS, 30% glass fiber reinforced polypropylene, or polyamide composites.

For those interested in 100% bioplastic blends, PHA producer Tianan Biologic compared properties and potential of PHBV/Ingeo and PHBV/EcoFlex® formulations, Industry Suppliers Takemoto, Sukano, and polymer producers BASF and Arkema highlighted technologies to improve the property and processing performance of Ingeo products. Enercon detailed its latest in surface treatments for improved adhesion of UV Flexographic inks to PLA substrates.

NatureWorks' Jed Randal provided the first public details of the formulation behind the new injection molding grade of Ingeo 3801X.

Advances in PLA fibers and nonwovens

US Pacific, Alhstrom, and the University of Tennessee shared the newest advances with Ingeo nonwovens in spun-bond and melt-blown applications such as hygiene, filtration, and agriculture. Fiber finish producer Ghouston presented the latest in Ingeo fiber surface modification developments, while NatureWorks' longest standing Ingeo fibers 'Master Licensee' partner, Fiber Innovation Technologies (FIT), shared recent developments in how FIT tailors fiber structure to customer requirements.

Cradle-to-cradle

A highly interactive panel session, moderated by the Sustainable Biomaterials Collaborative's Brenda Platt, looked at recovery from two angles — both composting, and reformulating post consumer and post industrial PLA back into lactic acid. Galactic (Europe) and BioCor (USA) discussed their businesses based on the model of lactic acid recovery from a variety of post consumer and post industrial polylactide residual sources.

Frito-Lay gave an overview of its extensive composting research for the compostable Sun Chip snack bag, while Canadian manufacturer Dyne-a-Pak introduced the successful development and market introduction of its compostable Ingeo-based alternative to polystyrene foam food packaging. California State Chico's Dr. Joe Greene discussed the holistic approach the school has taken to analyzing claims and performance of biobased packaging and food service ware.



The business case for going green

NatureWorks President and CEO Marc Verbruggen closed the conference, sharing his perspective with the audience on "keeping the innovation cycle going." Describing the outlook for Ingeo in the next several years, Verbruggen noted that variable cost parity between Ingeo and incumbent materials is within range, and that the increasing economies of production scale within the supply chain downstream of NatureWorks will help improve efficiencies and cost for all sales channel partners.

As proof points, Verbruggen highlighted the breadth and increasingly mainstream nature of the portfolio of Ingeo-based products now available to consumers; the third party interest and investment is transforming options for after-use treatment of bioplastics into new businesses; and the breadth of consumer communications now evident in the market as a key indicator of awareness and market penetration.

Presentations are available upon request from NatureWorks.

 www.natureworkslc.com
www.innovationtakesroot.com

