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FOR IMMEDIATE RELEASE

Harper Releases Performance Results of Production Scale Oxidation Oven

Buffalo, NY – Harper International is proud to announce initial data on its 3 meter wide production scale Oxidation Oven for carbon fiber manufacturing, demonstrating outstanding performance for key metrics including air velocity uniformity and temperature uniformity. Data was acquired at temperatures up to 280°C and air velocities up to 4 meters per second.

One of the most critical performance metrics in an Oxidation Oven is air velocity uniformity. Harper's Oxidation Oven uniformity measured 2.2%. Air velocity uniformity across the entire tow band is essential as the PAN stabilization phase is an exothermic reaction. If there are low velocity regions, the reaction can run away, causing deflagration. If there are high velocity regions, it can cause damage to the delicate PAN fiber.



Shown Above: One section of Harper's Production Scale Oxidation Oven

Harper's design also demonstrated temperature uniformity of +/- 2.5°C throughout the entire heated length. Temperature uniformity is critical in carbon fiber manufacturing because it enables higher and more efficient rates of production.

As greater production rates have led to wider, taller, and longer oxidation ovens, it is a critical challenge to improve velocity and temperature uniformity while simultaneously increasing the oven size. "Harper's Oven design offers our customers enhanced performance and increased confidence in their fiber manufacturing", commented Bill Stry, PhD and Renee Bagwell, PhD, Senior Process Technology Engineers at Harper. "We took on the task of engineering an Oxidation Oven that addresses today's and tomorrow's market demands for efficiency and quality, and the data obtained during full scale testing shows our success."

About Harper International

Harper International is a global leader in complete thermal processing solutions and technical services essential for the production of advanced materials. From concept to commercialization, from research scale to full production line operations, Harper is perpetually on the cutting edge of the most innovative furnace and oven designs in the world. For decades, they have pioneered some of the most unique, customized systems available, with a focus on processing materials at high temperatures up to 3000°C and in non-ambient atmospheres. For additional information, please visit www.harperintl.com or email info@harperintl.com.

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