

Aichi Int'l Business Newsletter

— Business and Economic Close-Up on Aichi and the Greater Nagoya Region —

Toray Centers Carbon Fiber Innovations in Nagoya

Fiber and textiles giant **Toray** sees its future in carbon fiber, and the company's commitment to expanding the market for the material has brought it to Nagoya.

Toray was the first company to put carbon fiber composites to practical use. Boeing first incorporated the company's advanced materials in its aircraft in the 1970s, and today carbon fiber composites are central to highly anticipated next-generation aircraft from both Boeing and Airbus.



Toray's new Automotive Center in Nagoya

When Toray committed to developing and expanding the market for carbon composites in its "Innovation TORAY 2010" mid-term strategic plan, the automotive and aerospace industries were made a priority. The light weight and high strength that carbon composites offer, combined with demand for lighter airplanes and vehicles to confront the rising cost of fuel and respond to emissions requirements, made these industries ideal candidates for widely adopting the cutting-edge material.

TORAY

Innovation by Chemistry

In June of 2008, Toray opened its repositioned Nagoya Plant as the center for production of advanced materials for the automotive industry. The **Automotive Center** will serve as a base for developing applications for carbon composites in tomorrow's automobiles and its location in

Aichi puts it smack dab in the center of Japan's most vibrant auto-producing region.

Aichi's position as a center for automotive manufacturing is not the only draw for Toray; the region is also Japan's top in aerospace and much of the manufacturing for Boeing's 787s will be carried out by Japan's "three heavies"—Kawasaki, Fuji and Mitsubishi—in Aichi. Aichi further strengthened its position as Japan's aerospace leader with the announcement of the Mitsubishi Regional Jet (MRJ), whose production will be based in the prefecture. Toray will team up with Mitsubishi to build the MRJ, which is slated to take flight in 2013. In 2009, Toray will add an **Advanced Composite Center** next to the Automotive Center. The completed site will be known as the **Automotive and Aircraft Center**.

Forum to Focus on New Materials

Toray will be a featured participant in the second **Greater Nagoya Cluster Forum** of 2009. Yasuo Suga, director of the Automotive Center, will present on anticipated applications for new materials. The two-day event will also feature a presentation on carbon reinforced plastics by a Mitsubishi Motors materials expert.

The forum, which will take place on February 9 and 10, will provide networking opportunities for companies involved in new materials. Closed business matching meetings and visits to nanotech research facilities are also on the agenda.

Three 2008 Nobel Prize Winners Share Nagoya University Ties

To the long list of inventors and innovators with connections to Nagoya, the city can now add three recent Nobel Prize winners.

Toshihide Masukawa and Makoto Kobayashi shared the honor of the 2008 Nobel Prize in Physics for "the discovery of the origin of the broken symmetry which predicts the existence of at least three families of quarks in nature." Drs. Masukawa and Kobayashi were each awarded one-fourth of the illustrious prize, which they shared with Japanese-born physicist Yoichiro Nambu.

Drs. Masukawa and Kobayashi were both born and raised in Nagoya and studied at Nagoya University.



The campus of Nagoya University, alma mater of three 2008 Nobel Prize Winners

Drs. Masukawa and Kobayashi's theories on broken symmetries expanded on those that were first posited by Dr. Nambu and that are at the heart of the Standard Model for elementary particle physics. The theories explain the universe's survival after the Big Bang despite what scientists had previously believed to be equal amounts of matter and anti-matter, conditions that would have led to the annihilation of the cosmos.

The Nobel Prize for chemistry winner can also claim strong ties to Nagoya. Though born in Kyoto, **Osamu Shimomura** came to Nagoya University as an assistant professor in 1956 and later earned both his MS and Ph.D. from the institution.

Dr. Shimomura was the first to isolate the green fluorescent protein (GFP), which occurs in certain jellyfish and glows under ultraviolet light. Dr. Shimomura's findings led to GFP's use in tracking proteins inside the human body, contributing to greater understanding of biological processes such as the spread of cancer. Dr. Shimomura shared the prize with two scientists who built on his monumental findings.

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