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Changing Lifestyles through Coating Technology

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New Japanese Umbrella Combines Bio PE, Nonwoven, and Bamboo Durability, Strength, Waterproof, UV Block Functions

Wouldn't it be better to enjoy those depressing rainy days? One possible solution might just be that umbrella you use on such days. For five years, Hiyoshiya Co., Ltd., a producer and retailer of traditional Japanese umbrellas (*wagasa*) with over 150 years of history, and Toyotsu Chemiplas Corporation collaborated to develop "ryoten," a new type of umbrella that is neither Japanese nor Western. Although the structure is that of a *wagasa*, this new type of umbrella combines a fabric produced by laminating polyethylene (PE) produced from sugar cane with a nonwoven fabric, and uses a framework of bamboo. Conventional *wagasa*, which use Japanese paper, are difficult to use on rainy days, but the canopy being made of bio PE, the new umbrella can be used in the same manner as a Western umbrella. The aluminum sliding handle also contracts, so the umbrella is compact and can be carried inside one's bag.

Today, the use of *wagasa* is limited to when wearing traditional Japanese clothing or during traditional events. Moreover, these are only made by a few producers in a limited number of areas, including Gifu, Kyoto, Kanazawa, Tottori, and Tokushima, while Hiyoshiya is the only maker left in Kyoto. At its height, however, more than 10 million *wagasa* were produced each year in Japan as an essential daily item. As the only remaining traditional maker of *wagasa* in Kyoto,

Hiyoshiya was faced with closing its doors 13 years ago. At that time, Kotaro Nishibori, president of Hiyoshiya, had left his job as a civil servant to become a *wagasa* maker and restructure Hiyoshiya, which belonged to his wife's family. Since taking over as the fifth owner, he has spent the past 13 years working to lead the business, with its more than 150 years of history, and its traditional craft into a new age.

From this situation, *ryoten*, an umbrella that is neither Japanese nor Western, but rather combines the features of both, was born.

Under the concept of "Tradition, Design, and Ecology," Mr. Nishibori spent five years developing a new *wagasa* that would be used normally in today's lifestyles. He had a specific reason for including the concept of ecology in the project.

According to a plastics industry expert, nearly 90 million plastic umbrellas are imported from China each year, and of these nearly 70 million are discarded as trash each year. Plastic umbrellas are illegally discarded at train stations and public facilities, and because these are almost all buried in landfills by local authorities, this issue has become a serious object of public concern. Moreover, many of the Chinese made transparent umbrellas labeled as polyethylene are actually made of polyvinyl chloride (PVC), a type of false labeling that is rampant. If all 70 million of today's disposable transparent umbrellas were replaced with bio PE, for example, the umbrella canopy alone would reduce CO₂ emissions by 20,090 tons each year.

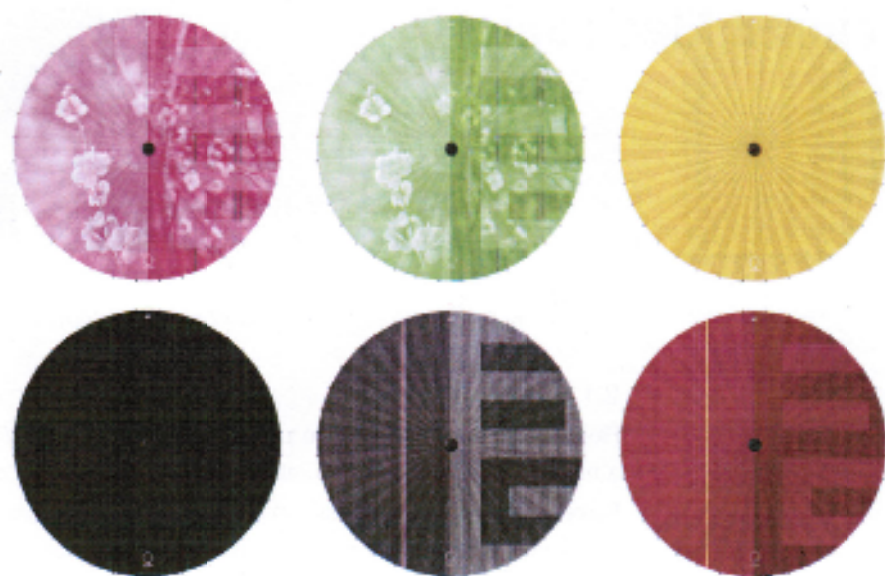
This new umbrella, *ryoten*, with its bamboo framework



Compact Design Allows for
Carrying in a Bag



New "ryoten" Designed
Under the Concept of
"Tradition, Design, and
Ecology"



6 Types of Design, from Basic Black to Floral and Modern Patterns



2WAY CASE (left) and Gift Bag
Provided on Purchase

and environmentally-friendly sugar cane based bio PE used to replace problematic PVC and PE, has sufficient strength, durability, waterproofness, and UV blocking functions to handle everyday use. The diameter is 840 mm with an outer rib length of 418 mm. The handle has a maximum length of 685 mm and a minimum length of 542 mm. The umbrella materials include bamboo, bio PE, polyester (nonwoven fabric), aluminum, wood, and synthetic leather.

Given its wagasa structure, ryoten has several features. One of these is that the wet fabric will not bother people. The reason for this lies in the structure, in which the large number of wagasa ribs, roughly 30-70, are on the outside when folded so that the fabric is on the inside, forming a single pole when folded. This is not possible with Western umbrellas.

The latest converting technologies, materials, and processes are also used in the production of ryoten. In general, the production process includes "framework production," "material lamination," and "adhesion of the fabric to the bamboo framework."



Case Can be Held by Hand
(pictured) or Hung on One's
Shoulder

First, a single piece of bamboo is split into equal parts to produce the bamboo ribs called outer ribs and inner ribs. After dyeing these black, the ribs are tied together using a single cotton thread to produce an umbrella framework that can be opened and closed.

Next, "MILIFE," a JX Nippon Oil & Energy Corporation nonwoven fabric, is laminated with a bio PE film sheet. The bio PE is a PE made from sugar cane and is supplied by Brazil based Braskem S.A., one of the largest chemical companies in South America, and obtained by Toyotsu Chemiplas of the Toyota Tsusho Group. J-Film Corporation then forms the bio PE into sheets.

The fabric dyeing technology used to express the stylish designs of ryoten was developed through a collaboration between the Kyoto Municipal Institute of Industrial Technology and Culture, and Nagase & Co., Ltd., as a dyeing method suited to the material.

Moreover, before adhering the fabric to the bamboo framework, the fabric surface undergoes a corona treatment to increase the adhesiveness.

There are six types of ryoten design. The umbrella has high designability, including a basic black design, modern designs, and pink and green flower patterns. According to Oliver Franz, creative director of silent., the umbrella's designer, ryoten is made of a single sheet, so comprehensive designs are possible, something that is difficult with Western umbrellas. As such, his designs emphasize this aspect.

The umbrella also comes with a 2WAY CASE for hand and shoulder carrying.

The umbrella was first released for sale at the end of May at Takashimaya department stores (Nihonbashi, Shinjuku, Yokohama, Nagoya, Osaka, Kyoto) and is now available throughout Japan. Umbrellas can also be ordered through the company's homepage.

Hiyoshiya Co., Ltd.

www.wagasa.com