France - Japan Partnership in Advanced Fiber

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Japan Chemical Fibers Association Hideki HIRABAYASHI (TORAY INDUSTRIES, Inc.)

1. Efforts of JCFA

Japan Chemical Fibers Association (JCFA)

- TEIJIN LIMITED
- TORAY INDUSTRIES, INC.
- KURARAY CO.,LTD.
- TOYOBO CO.,LTD.
- ASAHI KASEI CORPORATION
- UNITIKA LTD.
- MITSUBISHI RAYON CO.,LTD.
- FUJIBO HOLDINGS, INC.
- NITTO BOSEKI CO.,LTD.

- SEIREN CO.,LTD.
- DAIWABO CO.,LTD.
- OMIKENSHI CO.,LTD.
- KANEKA CORPORATION
- NITIVY CO., LTD.
- NIPPON ESTER CO.,LTD.
- TAI-RAY CO.,LTD.
- TEIKOKU SEN-I CO.,LTD.

Advanced Fiber as Japan's competitive strength

- Japanese chemical fibers industry leads the world in the field of advanced fiber.
- Keywords: Environmentally friendly, Security and Safety, Healthcare and Comfort
 - Advanced Fibers can provide effective solution to achieve.
- Wide range of application of Advanced Fiber : Healthcare, Civil engineering and Construction, Mobility…
 - Cooperation and alliance across wider area of industry is gaining importance to develop applications and find new markets.
- JCFA's marketing efforts by two projects:
 - 1) Transmission of information

JCFA

2) Worldwide promoting cooperation and

alliance across the industry

France-Japan Textile Cooperation WG

- Collaboration between Japan's advanced fiber and France's processing technology.
 - Expansion of the partnership.
 - Exploring new field of joint development project.



2. Development of Advanced Fiber Material

Current situation of Advanced Fiber

High-performance	High-function
Fiber with superior physical and chemical characteristics.	Fiber with unique functionality to meet customer's needs.
<main product=""></main>	<main function=""></main>
Aramid, High-Strength Polyarylate, PBO, Super ultra molecular weight polyethylene, Carbon fiber etc.	Sweat absorbing & Fast drying, Heat generation by moisture absorption, Anti- bacteria & Odor-preventing, Electrical conductivity, Biodegradability, etc.
Global Demand estimate of High-performance Fiber	Global Demand estimate of High-function Fiber
(10 Bil Yen) 650 600 550 500 450 400 2009 2013	(10 Bil Yen) 170 165 160 155 150 145 140 2009 2013
JCFA	

Source: JCFA

Japanese Company's Global Market Share In Advanced Fiber (2012)



Aramid Fiber





Sling



Reinforcement for Tire



Clutch facing



Optical fiber reinforcements





Protective / ballistic-protection



Rubber reinforcements

High-Strength Polyarylate Fiber





Rope, Netting, Fishing nets, etc



Sporting goods(Bicycle, Golf shaft, etc.)



Airship



Landing Airbag for Mars Pathfinder

(Source: Kuraray)

(Polybenzoxazole Fiber)

Space satellites

Protective glove

PBO Fiber

Cable cover for Welding machine

Cockpit and chassis of racing car (FIA-compliant)











Ultra Long Duration Balloon (NASA)

Carbon Fiber









JCFA

(Source: TEIJIN, TORAY, Mitsubishi Rayon)₁₂

High-Performance Fiber



3. Effort to decrease environmental impact with de-petrochemical raw material - by TORAY -

Efforts Toward Petrochemical Free





Plant-based

(Source: TORAY) 15

Carbon Cycle Of Plant-Based Polyester



Process Flow Of Partial Plant-Based Polyester



(Source: TORAY)

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Process Of 100% Bio-Based Polyester



World Capacity Of Bio Plastic





Material has power to change the world.

Thank you for your kind attention