

## The Market for Nanocellulose in Japan

https://marketpublishers.com/r/M64F9F29587EN.html

Date: July 2017

Pages: 117

Price: US\$ 525.00 (Single User License)

ID: M64F9F29587EN

#### **Abstracts**

Japan is at the forefront of the global nanocellulose market. The Japanese government is actively promoting these environmentally friendly advanced materials, and The Ministry of Economy, Trade and Industry (METI) estimates that the market will expand to 1 trillion yen (\$8 billion) by 2030.

Most major Japanese paper manufacturers have established nanocellulose production capabilities and have started to bring products to the market in the last 18 months. Target markets range from packaging to consumer electronics.

Report contents include:

Commercial activity in nanocellulose in Japan. Current and planned.

Production facilities and capacities.

Target markets for nanocellulose in Japan.

Producers and product developers.

Research Centre profiles.



#### **Contents**

# 1 NANOCELLULOSE PRODUCTS AND COMMERCIAL ACTIVITY IN JAPAN 2015-2017

#### **2 NANOCELLULOSE**

- 2.1 What is nanocellulose?
- 2.2 Types of nanocellulose
  - 2.2.1 NanoFibrillar Cellulose (NFC)
    - 2.2.1.1 Applications
    - 2.2.1.2 Production methods
  - 2.2.2 NanoCrystalline Cellulose (NCC)
    - 2.2.2.1 Applications
  - 2.2.3 Bacterial Cellulose (BCC)
    - 2.2.3.1 Applications
- 2.3 Synthesis of cellulose materials
  - 2.3.1 Microcrystalline cellulose (MCC)
  - 2.3.2 Microfibrillated cellulose (MFC)
  - 2.3.3 Nanofibrillated cellulose (MFC)
  - 2.3.4 Cellulose nanocrystals (CNC)
  - 2.3.5 Bacterial cellulose particles (CNC)

#### **3 REGULATIONS IN JAPAN**

#### **4 NANOCELLULOSE MARKET STRUCTURE IN JAPAN**

- 4.1 Routes to commercialization
- 4.2 Volume of industry demand for nanocellulose by nanocellulose producer sales

#### 5 GOVERNMENT INITIATIVES AND FUNDING FOR NANOCELLULOSE IN JAPAN

#### 6 NANOCELLULOSE END USER MARKET SEGMENT ANALYSIS.

- 6.1.1 Cellulose nanofiber production in Japan
- 6.1.2 Prices

#### 7 MARKETS FOR NANOCELLULOSE IN JAPAN



- 7.1 Automotive
  - 7.1.1 Commercial activity in Japan
- 7.2 Sanitary products
  - 7.2.1 Commercial activity in Japan
- 7.3 Packaging
  - 7.3.1 Bio-based and -active packaging
  - 7.3.2 Active packaging systems
  - 7.3.3 Packaging films
  - 7.3.4 Gas barrier
  - 7.3.5 Sustainable packaging solutions
  - 7.3.6 Commercial activity in Japan
- 7.4 Paper and board
  - 7.4.1 Paper packaging
  - 7.4.2 Paper coatings
  - 7.4.3 Commercial activity in Japan
- 7.5 Drilling fluids
  - 7.5.1 Commercial activity in Japan
- 7.6 Filtration and separation
  - 7.6.1 Commercial activity in Japan
- 7.7 Rheology modifiers
  - 7.7.1 Commercial activity in Japan
- 7.8 Printed and flexible electronics
  - 7.8.1 Eco friendly, bio based, biodegradable, transparent and flexible
  - 7.8.2 Paper electronics
  - 7.8.3 Electronics packaging
  - 7.8.4 Wearable electronics
  - 7.8.5 Paper memory
  - 7.8.6 Conductive inks
  - 7.8.7 Commercial activity in Japan
- 9 NANOCELLULOSE RESEARCH CENTRES IN JAPAN

#### **10 REFERENCES**







#### **List Of Tables**

#### LIST OF TABLES

- Table 1: Markets and applications for nanocellulose
- Table 2: Nanocellulose production plants worldwide and production status
- Table 3: Nanocellulose properties
- Table 4: Applications of nanofibrillar cellulose (NFC)
- Table 5: Production methods of NFC producers
- Table 6: Applications of nanocrystalline cellulose (NCC)
- Table 7: Applications of bacterial cellulose (BC)
- Table 8: Microcrystalline cellulose (MCC) preparation methods, resulting materials and applications
- Table 9: Microfibrillated cellulose (MFC) preparation methods, resulting materials and applications
- Table 10: Nanofibrillated cellulose (MFC) preparation methods, resulting materials and applications
- Table 11: Cellulose nanocrystals (MFC) preparation methods, resulting materials and applications
- Table 12: Cellulose nanocrystals (MFC) preparation methods, resulting materials and applications
- Table 13: Nanocellulose market structure in Japan
- Table 14: Production capacities of CNF producers per annum in tons, current and planned
- Table 15: Product/price/application matrix of nanocellulose producers in Japan
- Table 16: Application markets, competing materials, Nanocellulose advantages and current market size in the automotive sector
- Table 17: Market assessment for nanocellulose in the automotive sector
- Table 18: Market size for nanocellulose in the automotive industry
- Table 19: Companies developing Nanocellulose products in the automotive industry, applications targeted and stage of commercialization
- Table 20: Companies developing nanocellulose products in sanitary products in Japan
- Table 21: Equivalent cost of nanocellulose and competitive materials in polymer composites
- Table 22: Applications of nanocellulose in polymer composites by cellulose type
- Table 23: Examples of antimicrobial immobilization into cellulose nanofibers
- Table 24: Oxygen permeability of nanocellulose films compared to those made form commercially available petroleum based materials and other polymers
- Table 25: Application markets, competing materials, NFC advantages and current



market size in polymer composites

Table 26: Application markets, competing materials, NFC advantages and current market size in packaging

Table 27: Companies developing nanocellulose products in packaging In Japan

Table 28: Companies developing nanocellulose products in paper and board in Japan

Table 29: Nanocellulose product developers in drilling fluids in Japan

Table 30: Types of filtration

Table 31: CNF membranes

Table 32: Companies developing nanocellulose products in filtration in Japan

Table 33: Commercial activity in nanocellulose rheology modifiers in Japan

Table 34: Properties of flexible electronics?cellulose nanofiber film (nanopaper)

Table 35: Companies developing Nanocellulose products in paper electronics in Japan

Table 36: Target market, by nanocellulose producer



### **List Of Figures**

#### LIST OF FIGURES

- Figure 2: CNF wet powder
- Figure 3: Schematic diagram of partial molecular structure of cellulose chain with
- numbering for carbon atoms and n= number of cellobiose repeating unit
- Figure 4: Scale of cellulose materials
- Figure 5: Types of nanocellulose
- Figure 6: Relationship between different kinds of nanocelluloses
- Figure 7: TEM image of cellulose nanocrystals
- Figure 8: CNF transparent sheet
- Figure 9: Running shoes incorporating cellulose nanofibers
- Figure 10: Ballpoint pen incorporating cellulose nanofibers
- Figure 11: Schematic of typical commercialization route for nanocellulose producer
- Figure 12: Volume of industry demand for nanocellulose by nanocellulose producer
- sales, in Japan
- Figure 13: CNF wet powder
- Figure 14: Cellulose nanofiber transparent sheet
- Figure 15: Example process for producing NFC packaging film
- Figure 16: Paper and board global demand
- Figure 17: Cellulose nanofiber films
- Figure 18: Nanocellulose photoluminescent paper
- Figure 19: LEDs shining on circuitry imprinted on a 5x5cm sheet of CNF
- Figure 20: Paper memory (ReRAM)
- Figure 21: Asahi Kasei CNF fabric sheet
- Figure 22: Properties of Asahi Kasei cellulose nanofiber nonwoven fabric
- Figure 23: CNF transparent film
- Figure 24: CNF wet powder



#### I would like to order

Product name: The Market for Nanocellulose in Japan

Product link: <a href="https://marketpublishers.com/r/M64F9F29587EN.html">https://marketpublishers.com/r/M64F9F29587EN.html</a>
Price: US\$ 525.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer

Service:

info@marketpublishers.com

## **Payment**

First name: Last name:

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <a href="https://marketpublishers.com/r/M64F9F29587EN.html">https://marketpublishers.com/r/M64F9F29587EN.html</a>

To pay by Wire Transfer, please, fill in your contact details in the form below:

Email:	
Company:	
Address:	
City:	
Zip code:	
Country:	
Tel:	
Fax:	
Your message:	
	**All fields are required
	Custumer signature

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <a href="https://marketpublishers.com/docs/terms.html">https://marketpublishers.com/docs/terms.html</a>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970