

September 12th 2022

Investment in a Manufacturer of Lithium Salt as the Electrolyte for Lithium-ion Battery in China

NIPPON SHOKUBAI CO., LTD. (Headquarters: Osaka, Japan, President: Kazuhiro Noda, hereinafter “Nippon Shokubai”) aims to expand our LiFSI* business in China, the biggest market of lithium-ion batteries (hereinafter “LIB”). We hereby announce that, as part of this business expansion, we have reached agreement on investment in Hunan Fluopont New Materials Co., Ltd. (hereinafter “Hunan Fluopont”), a subsidiary of Shenzhen CAPCHEM Technology Co. Ltd. (hereinafter “Capchem”), who is currently making efforts to establish production facilities to enter LiFSI business.

*Lithium bis (fluorosulfonyl) imide (Product name: IONEL™), a lithium salt as the advanced electrolyte which was commercialized first in the world by Nippon Shokubai.

1. Background of the alliance

With a rising awareness of environmental issues in recent years, there is a high demand for electric vehicle (EV), which is an industry-leading product of energy-saving and low-pollution next-generation vehicles, and this has led to the rapid expansion of the LIB market for EV. Because using LiFSI as an electrolyte in LIB for EV significantly improves the battery’s cyclic and rate performance as well as storing stability over a wide temperature range from low to high temperatures, LiFSI has been adapted not only as an additive, but also as a main ingredient of the electrolyte. As this has led to a surge in LiFSI demand particularly in Asia and Europe, early business expansion to China, the world’s biggest LIB market for vehicles has been a key for us to make a big leap in our IONEL™ business.

2. Purpose of the alliance

Under these circumstances, in order to acquire high-profile customers and early establish a cost-competitive manufacturing and sales structure in China with the largest LIB demand, we have decided to form an alliance with Capchem, a major electrolyte solution manufacturer, and Toyota Tsusho Corporation (Headquarters: Nagoya, Japan, President: Ichiro Kashitani, hereinafter “Toyota Tsusho”), who is Toyota Group’s general trading company. The investment will be made by Toyota Tsusho (Shanghai) Co., Ltd. (hereinafter “Toyotsu Shanghai”). This will allow us to combine our state-of-the-art LiFSI production technologies, quality control capability, and intellectual properties with Hunan Fluopont’s cost-competitiveness, location, material procurement capability, production system, and existing technologies, and Capchem’s LiFSI purchasing capability supported by their top-level supply capacity of electrolyte solutions, as well as Toyota Tsusho’s world-wide sales network encompassing China. Through this alliance, we will aim to accelerate

our IONEL™ business in the electrolyte market.

LiFSI is known as a difficult substance to purify to a high degree, which is only achieved by advanced know-how for its production and quality management. Using our unique production technology that we have nurtured over the years, in 2013, we succeeded in the development of an industrial production process of highly-pure LiFSI with few solvents and by-products, exhibiting stable electrochemical properties, for the first time in the world. Our product has been adopted and certified as the electrolyte by many LIB manufacturers inside and outside Japan with a wide variety of applications including vehicle, consumer-use, and stationary batteries.

(For details of LiFSI, please refer to our website: <https://www.shokubai.co.jp/en/lp/ionel/>)

Capchem is the world's second largest manufacturer of electrolyte solution for LIB with five production sites in China, and has a track record of providing its products to major LIB manufacturers. Their business includes not only manufacturing of electrolyte solution, but also in-house material production of solvent, electrolyte, additive, which enables them to offer electrolyte solution with price competitiveness and high quality.

Toyota Tsusho is looking to expand their LiFSI sales beyond China to electrolyte solution manufacturers in Japan, Asia, and Europe to meet the surging demand in the electrolyte solution and electrolyte markets.

Hunan Fluopont started its production in the second half of FY2022 with the first unit (production capacity 1,200t/y). It is planned to be expanded in stages to satisfy the rapidly increasing market demand, aiming to have annual production capacity of 12,000 ton/y in 2025.

3. Investment overview

Nippon Shokubai and Toyotsu Shanghai will invest in the following company.

(1) Company name

Hunan Fluopont New Materials Co., Ltd.

(2) Location

Shigu District, Hengyang, Hunan, China

(3) Amount invested (third-party allocation of shares)

Nippon Shokubai: 201,769,912 RMB (4.04 billion JPY)

Toyotsu Shanghai: 29,203,539 renminbi (580 million JPY)

<Assumed exchange rate: 20 JPY/RMB >

(4) Shareholders

Capchem: 51.19%

Nippon Shokubai: 38.0%

Toyotsu Shanghai: 5.5%

Changsha ShinLian Huayuan Alternative Energy Partnership Enterprise (shareholding association by executive employees of Hunan Fluopont): 5.31%

(5) Representative

Shu Ping Ai

(6) Businesses

Manufacturing and sales of electrolyte LiFSI for LIB

(7) Production capacity

Current: 1,200t/ year in the second half of FY2022

Plan: 12,000t/ year in FY2025

Related information

Profile of Shenzhen CAPCHEM Technology Co. Ltd.

Company Name	Shenzhen CAPCHEM Technology Co. Ltd.
Location	Capchem Plaza, Changye Road, Pingshan District, Shenzhen, Guangdong Province, China.
Establishment	1996
Capital	410 million RMB (8.2 billion JPY) (as of end of 2021)
Total assets	223.3 billion JPY (as of end of 2021)
Sales	139 billion JPY (FY2021)
Operating profit	30.8 billion JPY (FY2021)
Business overview	Lithium battery chemicals, organic fluorine chemicals, capacitor chemicals and semiconductor chemicals. For lithium-ion battery electrolytes in mass production at five production sites in China and several other production sites under construction in China and Poland.
Website	https://en.capchem.com/

Profile of Toyota Tsusho Corporation

Company Name	Toyota Tsusho Corporation
Location	9-8, Meieki 4-chome, Nakamura-ku, Nagoya 450-8575 Japan
Establishment	1948
Capital	64.9 billion yen (as of end of March 2022)
Total assets	6,143.1 billion yen (as of end of March 2022)
Sales	8,028 billion yen (FY 2021)
Operating profit	294.1 billion yen (FY 2021)
Business overview	As a general trading company of Toyota Group, the company has expanded its business with a focus on exports of vehicles and automobile production support. The company has seven business fields (Metals, Global Parts & Logistics, Automotive, Machinery, Energy & Project, Chemicals & Electronics, Food & Consumer Services, and Africa). and focuses on three core businesses, Mobility business that contributes to future convenient society, Resources & Environment business that contributes to sustainable society and Life & Community

	business that contributes to comfortable & healthy society. Around 65,000 Group employees are engaged in business in about 130 countries.
Website	https://www.toyota-tsusho.com/english/

Profile of Toyotsu Shanghai

Company Name	TOYOTA TSUSHO (SHANGHAI) CO.,LTD.
Location	1717 Nanjing West Road, Jinganqu, Shanghai, China
Establishment	1995
Capital	33.18 million RMB (660 million JPY) (as of end of March 2022)
Business overview	The company mainly operates trading businesses with a wide variety of business units including Metal, Global and Logistics, Chemical Products and Electronics, Mechanical and Energy Plant Project, Food and Household Items, and East Asia Next Mobility Promotion Project.

About NIPPON SHOKUBAI: Since 1941, Nippon Shokubai has grown up its business with unique catalyst technology. Nippon Shokubai has supplied, for example, ethylene oxide and acrylic acid. Among all, our production capacity of superabsorbent polymers is the largest in the world (according to Nippon Shokubai research). We are currently focused on the Solutions Business, and IONEL (LiFSI) mentioned on this announcement plays a key role in accelerating the business. Nippon Shokubai is a global chemical company operating under its corporate mission “TechnoAmenity - Providing prosperity and comfort to people and society, with our unique technology.”

<https://www.shokubai.co.jp/en/>

【Contacts】

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