Organised by:

SCIC SINGAPORE CHEMICAL INDUSTRY COUNCIL | Standards Development Organisation

FBIA

Singapore Standards Council

Fine Bubble Technology Symposium

Date : **30 Aug 2022 (Tuesday)**

Time : **9.00am to 4.15pm (SGT)**
(Login from 8.45am onwards via Zoom)

Enquiries: Contact +65 6316 3740 or 6267 8591
Email to sdo@scic.sg

Seminar Information

Fine bubble technology (FBT) is an exciting innovative technology that has demonstrated applications for an impressive range of industries including aquaculture, water treatment, environmental cleaning, agriculture, food and beverage, healthcare, deep cleansing for personal care, sterilization etc. Capitalising on the behaviour of air-in-water fine bubbles ranging from a few micrometers to nanometers that is radically different from that of normal bubbles in water, the technology has demonstrated revolutionary changes to key industry sectors in Japan and thus has the potential to develop globally. In Singapore, fine bubble applications have started to pick up in urban agri-food industry, water treatment applications and environmental cleaning.

ISO/TC281 was established from 2013 to champion and promote the adoption of fine bubble technology by industries and also serves as a platform to contribute to the sustainability of the technology. Singapore participates actively in the ISO/TC 281 Fine Bubble Technology committee which develops international standards for fine bubble technology in order to foster the industry applications.

This symposium will provide insights by local and international experts of FBT research and applications. In addition to industry applications, the principles and measurement of fine bubble technology, will also be shared. Participants will learn more about the efficacy, productivity and sustainability outcomes from the applications of FBT.

How to register

Online Registration: You may register online at
https://scic.sg/index.php/en/component/rseventspro/event/385

Registration cut-off date: 26 Aug 2022 (Friday)

Registration fee: Free of charge

Note: Upon registration, you will receive an automated confirmation email from Zoom, containing your unique link to access the webinar.

Who Should Attend

Organisations and their service providers in urban agri-food sectors which includes the export of live seafood, food processing; environmental cleaning and water treatment as well as testing and certification bodies, Institutes of Higher Learning (IHLs), research institutes and relevant government agencies involved in these industries.

About SDO@SCIC

The Singapore Chemical Industry Council Limited (SCIC) is appointed by Enterprise Singapore as the Standards Development Organisation (SDO) to manage the Chemical Standards Committee (CSC) and Environment & Resources Standards Committee (ERSC). SDO@SCIC administers the development, promotion and implementation of standards in these areas.

The CSC and ERSC are guided by the industry-led Singapore Standards Council, which provides advice on the directions, policies, strategies and priorities for the Singapore Standardisation Programme, managed by Enterprise Singapore, the national standards body.

The Singapore Standardisation Programme is managed by Enterprise Singapore

See next page for event programme →

Event Programme

Time (SGT)	Topic
8.45am – 9.00am	**Attendees to login via Zoom**
9.00am – 9.05am	**Opening by Enterprise Singapore** *Mr. CHEONG Tak Leong* *Director (Standards), ESG Quality & Excellence, Enterprise Singapore*
9.05am – 9.10am	**Opening by Fine Bubble Industries Association (FBIA)** *Mr. Satoru MORIKAWA* *Chairman, FBIA (Japan)*
9.10am – 9.40am	**Fundamentals and development of Fine Bubble Technology** *Prof. K. TERASAKA,* *Keio University (FBIA Board member, Japan)*
9.40am – 10.05am	**Nanobubbles promote nutrient utilization and plant growth in rice and aquatic vegetation** *Assoc Prof. LI Pan* *Tongji University (China)*
10.05am – 10.30am	**Key technologies to apply Fine Bubble for Agriculture** *Mr. ARAKI* *IDEC Corp. (Japan)*
10.30am – 10.55am	**Introduction to Enhanced Dissolved Air Floatation (DAF) process for water treatment** *Dr. Hyoungjun KIM,* *Irehenvit Corp. (Korea)*
10.55am – 11.05am	**Break**
11.05am – 11.30am	**Update on nanobubble research from Hong Kong** *Prof. Sophie HILAIRE & Dr Farid M. USMAN* *City University of Hong Kong (China)*
11.30am – 11.55am	**Anti-oxidative Capacity of Hydrogen Nanobubble water and its Application in the Eco-Toxicity field** *Assoc Prof. LIU Shu,* *Beihang University (China)*
11.55am – 12.20pm	**Practical examples on Application of FB to recent wastewater treatment process and Aquaculture industry** *Mr. OHKOSHI* *YBM Corp (Japan)*
12.20pm – 1.20pm	**Break**
1.20pm – 1.25pm	**Opening speech** *Dr. Stephen WARD-SMITH* *Chair for ISO/TC 281 Fine Bubble Technology*
1.25pm – 1.45pm	**Standardization – Platform for promoting emerging technologies** *Dr. LOH Wah Sing,* *Chair, Mirror Committee for TC 281 Fine Bubble Technology (Singapore)*
1.45pm – 2.10pm	**Surface tension of water with ultrafine bubbles and standardization of its measurement method** *Dr. YASUI,* *National Institute of Advanced Industrial Science and Technology (AIST) (Japan)*
2.10pm – 2.30pm	**Catalytic microbubble ozonation for industrial wastewater treatment** *Prof. HU Jiang Yong,* *Director, Centre for Water Research, National University of Singapore (NUS) (Singapore)*
2.30pm – 2.50pm	**Benefits of FB application in marine fish aquaculture** *Dr.Saravanan PADMANABHAN,* *Lead Scientist, Aquaculture Innovation Centre (AIC) (Singapore)*
2.50pm – 3.15pm	**A certification service activity for fine bubble technology - An example in Japan** *Dr. TANAKA,* *Fine Bubble Industries Association (Japan)*
3.15pm – 3.25pm	**Break**
3.25pm – 4.00pm	**Corporate presentations** *1) OK Engineering: Seawater FB generator* *2) Maruyama: Treatment of oil, agriculture & $CaCO_3$* *3) Hatano: FB nozzles* *4) Cube2* *5) MTG: FB Shower head* *6) West Nippon highway Engineering: Industrial cleaning by FB Tech* *7) SG2*
4.00pm – 4.10pm	**Q&A session** *Moderator: Dr. LEE Chee Wee,* *Centre Director, Aquaculture Innovation Centre, Temasek Polytechnic* *Panellists: Speakers of FB Symposium*
4.10pm – 4.15pm	**Closing remarks** *Dr. LOH Wah Sing,* *Chair, Mirror Committee for TC 281 Fine Bubble Technology (Singapore)*
4.15pm	**End**

Note: SDO@SCIC reserves the rights to change the programme without prior notice.