



Fine bubble technology / Declaration at EXPO 2025

We, ISO/TC 281 and FBIA, will contribute to advance the industrialization of fine bubble technology through ISO international standardization and aim at the ISO vision of "Making lives easier, safer and better." ¹⁾

ISO Standards used everywhere :

To promote the use of ISO Standards for fine bubble technologies everywhere, we will use the terminology "ultrafine bubble" in reference to gas bubbles with diameters less than 1 μ m.

We will not use the term "nanobubble" to maintain consistency within ISO Standards and avoid confusion of usage in industry and research. ^{1),2)}

Meeting global needs :

To promote global adoption of environmentally-friendly fine bubble technologies in response to various needs and Sustainable Development Goals (SDGs), we will advance the industrialization of fine bubble technology as the top priority and promote the overall and common application. ^{1),3)}

All voices heard :

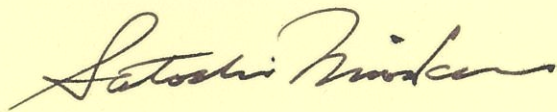
We will promote standardization through the development of TC 281 (Fine bubble technology) documents to meet demands from a wide range of application fields including safety, health and well-being and environmental applications. ¹⁾

17th July, 2025

Declared by;



Richard Stephen Ward-Smith
Chair
ISO/TC 281



Satoshi Morikawa
Chairman
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[References]:

- 1) ISO Strategy 2030, ISO's goals for 2030
- 2) ISO 20480-1:2017 Annex A Use of the terms "fine bubble" or "ultrafine bubble", instead of "nanobubble" in ISO/TC 281 documents
- 3) ISO/TR 24217-2:2021 Fine bubble technology - Guideline for indicating benefits - Part2: Assignment of Sustainable Development Goals (SDGs) to applications of fine bubble technologies