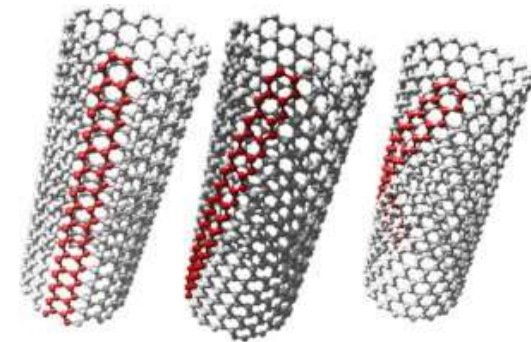
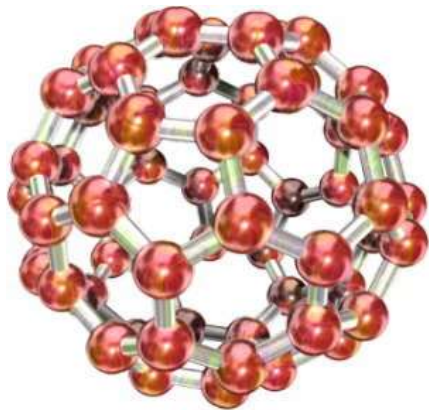


Nanotechnology Business Creation Initiative in Japan (NBCI)

November 2024

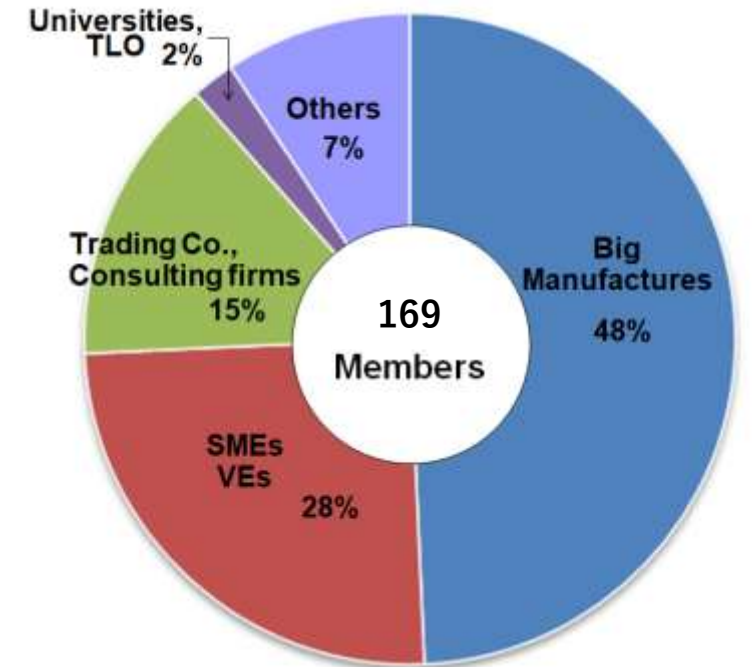


【Our slogan of 2024】

NBCI become "Hub of Co-creation " that leads to the resolution of social issues, leveraging organizational diversity to build a collaborative network.

NBCI is Japanese institution established in 2003 to launch and expand the nanotechnology business.

- One of the most industry driven organizations in Japan run on annual membership fees.
- The membership is provided to organizations registered in Japan



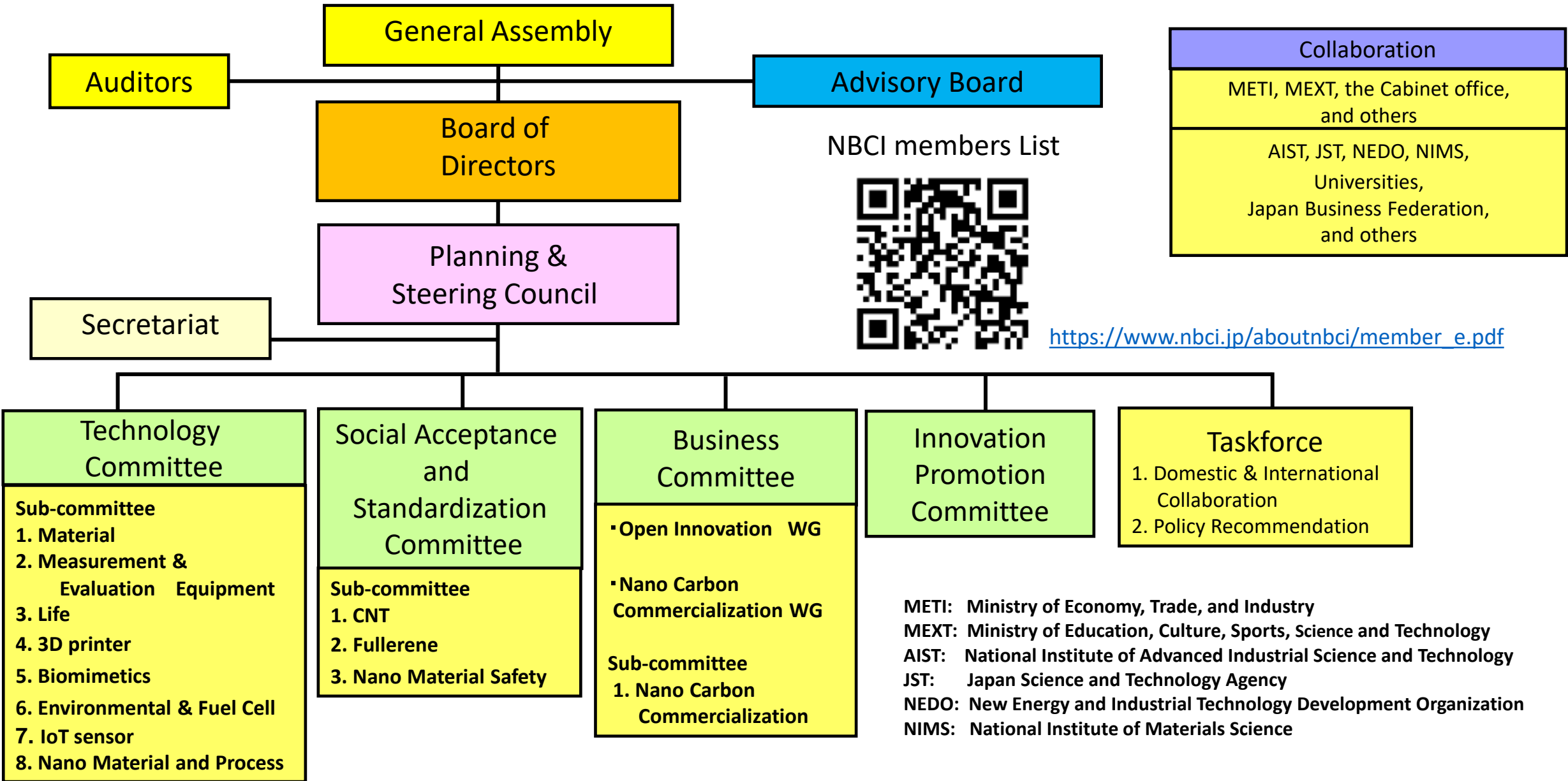
TLO: Technology Licensing Organization



<https://www.nbcj.jp/en/>

- **Business creation by strengthening cross-industry network**
 - Understanding and sharing needs and seeds information through study group activities
 - Support for building a personal network that transcends industry, government, and academia
 - Providing a forum for discussions to create businesses that lead to the solution of social issues
- **Understanding and effective utilization of governmental policies and systems**
 - Understanding social issues and policy information, and providing them in a timely manner
 - Dissemination of business needs to government officials through frequent exchange of opinions
- **Expansion of nanotechnology business / establishment of infrastructure for industrialization**
 - Extracting and responding to common issues such as standardization related to nanomaterials
 - Industry-government-academia collaborative activities related to ensuring safety and responding to concerns about nanomaterials

NBCI Organization



Board of Directors Companies

◆ Chair company of the board of directors:

Resonac Holdings Corporation

◆ Vice-chair companies of the board of directors:

JEOL Ltd.

NEC Corporation

Mitsubishi Corporation

RICOH Company, Limited.

TOPPAN Holdings Inc.

ZEON CORPORATION

Advisory Board

Kazuhiko Ishimura	President, National Institute of Advanced Industrial Science and Technology (AIST)
Kazuhiro Hono	President, National Institute for Materials Science (NIMS)
Kazuhito Hashimoto	President, Japan Science and Technology Agency (JST)
Tomoji Kawai	Emeritus Fellow, Technology Strategy Center, New Energy and Industrial Technology Development Organization (NEDO) Professor, Osaka University
Sumio Iijima	Professor, Meijo University
Masayoshi Esashi	Senior Research fellow, Micro System Integration Center, Tohoku University
Toshiki Niino	Professor, Tokyo University
Masatsugu Shimomura	Professor Emeritus, Chitose Institute of Science and Technology
Akira Ono	Emeritus Researcher, National Institute of Advanced Industrial Science and Technology (AIST)
Akihiko Hirose	Science Advisor, Chemicals Assessment and Research Center, Chemicals Evaluation and Research Institute, Japan

NBCI Activity Policy

- **"Nanotechnology"** has become a technology that is used on a daily basis in the manufacturing industry due to the progress of analytical technology, manufacturing and processing technology over the last 20 years, and **be fundamental technology for promoting innovation in the fields of AI, biotechnology, quantum, and materials that are rapidly advancing.**
- **NBCI is made up of highly diverse companies** with the keyword "nanotechnology". **Utilizing this feature, we will support members to develop activities that contribute to solving social issues such as SDGs** in collaboration with other members, government agencies, incorporated administrative agencies, and universities.
- For this purpose, **NBCI is promoting the collection and sharing of the latest technical and environmental safety information, and networking** with industry, academia and government. Furthermore, **we are making recommendations on R&D strategies, environmental safety regulations, and standardization activities in the field of nanotechnology.**

Mission of Committees

(1) Technology Committee

- Sub-committees have been set up for each target technology field selected from the perspective of promoting the practical application of nanotechnology (currently **8 sub-committees**). **Through the holding of the sub-committees and lectures, information on technology, products, and markets will be shared among member companies, and related databases are maintained and made public.**
- Through this sub-committee activity, we support the creation of a wide range of personal networks among participating members, which is the basis of cooperation/open-innovation between member companies.

(2) Social Acceptance and Standardization Committee

- **In order to promote the use of nanomaterials and their products, we cooperate with related ministries and research institutes to develop and share basic knowledge about nanomaterials, safety information, handling management guidelines as well as regulations,** etc. We make recommendations from the standpoint of the nanomaterials industry.
- From the perspective of improving the international market and distribution environment, **we also participate in standardization activities such as ISO / TC229 and OECD / WPMN.**

Mission of Committees

(3) Business Committee

- **We create an environment in which members can easily carry out collaboration and open innovation between member companies, governments, independent administrative agencies, universities, etc., and promote the creation of new businesses that lead to social issues.**

In the nanocarbon field, In addition by holding lectures and sharing technology and market information, we promote commercialization through holding “Nanocarbon Open Solution Fairs” at “nano tech” (nanotechnology exhibition).

(4) Innovation Promotion Committee

- **By holding lectures by key people such as the government and incorporated administrative agencies, we motivate the sensitivity of members to social and policy issues, provide information on government projects and support systems, and support their utilization by member companies.**

In addition, **regarding the utilization of government projects and support systems, policy proposals are made from the standpoint of the utilization side.**

Nanocarbon Industry Landscape map 2024



Single- or/and Double- walled CNT
 ZEON
 New Metals and Chemicals
 Honjo Chemical
 Meijo Nano Carbon

Rubber-, Plastics- Master bach
 GSI Creos Carbonfly
 Dainichiseika Nakatani &
 TOYOCOLOR ZEON **CNT-CFRP Prepreg**
 TP Carbonfly
 Sunarrow

Moulded article
 GSI Creos
 DAIKIN FINETECH
 Sunarrow
 NITTA
 Nippon Shizai



Multi-walled C(N)T, C(N)F
 Hamamatsu Carbonics
 KOATSU GAS KOGYO
 RESONAC Hohsen
 GSI Creos Carbonfly
 Honjo Chemical TPR
 TODA KOGYO LG Chem
 New Metals and Chemicals

Dispersant • Dispersion
 <Dispersant for CNT, CB or/and Graphene >
 Kao
 <Dispersion>
 KJ SPECIALTY PAPER
 KOATSU GAS KOGYO
 New Metals and Chemicals
 ZEON Carbonfly
 Nippon Shizai NiSiNa materials
 Hohsen TPR
 Meijo Nano Carbon
 Sunarrow GSI Creos

Film
 GSI Creos
 Hamamatsu Carbonics
 Hokuetsu Corporation
 Carbonfly

Graphene
 Jikantechno
 New Metals and Chemicals
 NiSiNa materials
 NSC OSAKA GAS

Coating Liquid
 KJ SPECIALTY PAPER

Fiber • Electric wire
 Hamamatsu Carbonics
 Ishizue Magnet Wire Works
 Carbonfly

Fullerene
 New Metals and Chemicals
 Frontier Carbon
 Honjo Chemical
 IDEA INTERNATIONAL

CNT separation technique into Semiconducting and metallic CNTs
 Meijo Nano Carbon

Manufacturing Equipment
 Hiroshima Metal & Machinery
 Fuchita Nanotechnology
 PRC
 KYODO INTERNATIONAL
 Sugino Machine
 Beryu
 IDEA INTERNATIONAL
 THINKY

Analysis and Assessment
Equipment
 SHIMADZU
 Mageleka Japan
 HORIBA
 Sanyo Trading
 HORIBA
 Sumica Chemical Analysis Service
 TOKYO DYLEC
 Bethel
 SEIKO FUTURE CREATION
 UBE Scientific Analysis Laboratory
 JEOL
 JEOL

Contract analysis
 IDEA INTERNATIONAL
 Mageleka Japan

Others
Trend Survey
 IDEA INTERNATIONAL
 Mizuho Research & Technologies
 NIPPON STEEL Chemical & Material
 Nomura Research & Advisory
 Yano Research Institute
Business Investment
 Mitsubishi
Research Institution
 AIST / Nano Carbon Device Research Center
Protective equipment
 SHIGEMATSU WORKS

nano tech 2024 the world's largest event of nanotechnology

2024. 1. 31 - 2. 2 , Tokyo Big Site

- NBCI participates every year to introduce nanotechnology market
- Held an international nanotechnology association conference



- Nanocarbon Open Solution Faire (Joint Event of NBCI and JCD)
 - to promote efficient business matching for expanding the use of nanocarbon by holding this fair that aggregates exhibitions related to the production and use of nanocarbon

The 16th

International Nanotechnology Association Conference

Date : February 1th 2024, at 9;30-11;30

Venue : Meeting Room (4) in East Hall 4 upper Area, Tokyo Big Sight

■ Objective :

**To exchange information in each Country and Region
on Governmental policy/ direction for Nanotechnology**

■ Participants : 10 associations from 8 countries

Deep Tech Canada, Waterloo Institute of nanotechnology(CANADA),
Netherlands Enterprise Agency (Netherlands),
Nanoinitiative Bayern GmbH(Germany),
TANIDA(Taiwan),ANF(Asia Nano Forum: THAILAND,MALAYSIA).
Entrepreneurship Academy of Nanyang Technological University(Singapore)

From Japan: Dr. Shosuke Kiba, Program Director, Cross-ministerial Strategic
Innovation Program, Japanese Council for Science, Technology and Innovation

**Topic: The Challenge of Building an Ecosystem for New Business Creation
in the Materials Industry in Japan**



Responding to European regulation on CNTs

◆ European CLP Regulation :

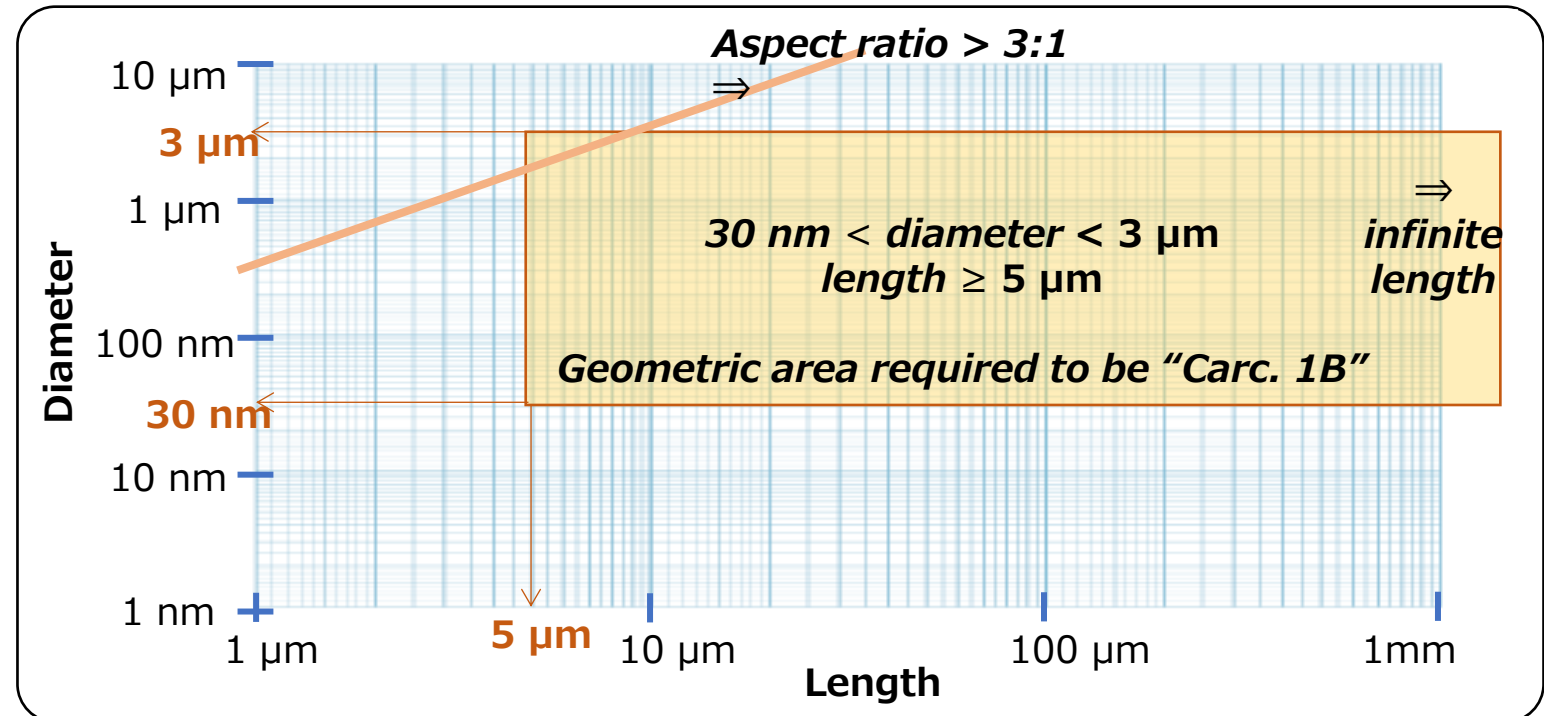
this Regulation requires classification, labeling and packaging of substances and mixtures placed on the market in the EU that are hazardous or explosive to humans and the environment.

◆ Proposal

BAuA proposed to ECHA that Multi-Walled Carbon Tubes **with geometric tube diameter range ≥ 30 nm to <3 μm and a length ≥ 5 μm** , including MWC(N)T be classified as **Carcinogenic Category "Carc.1B"** (presumed carcinogenic) in the CLH classification.

◆ matter of concern

- There is a possibility that many MWC(N)T, including European products, will be subject to regulation.
- There is a possibility that the social usefulness of CNT will be impaired.



NBCI submitted three comments to ECHA

① August 2021, ② July 2022, ③ August 2022



◆ Summary of Opinions

- ✓ **Insufficient scientific evidence** to conclude that diverse CNT products are equally harmful
- ✓ Regarding carcinogenicity classification, **the classification of IARC should be respected** and harmonized with international rules.
→ **Only MWNT-7 becomes Carc.1B, other MWCNTs are not Carc.1B.**
- ✓ **Expectations for CNT Applications**
- ✓ **Suggested risk management methods**

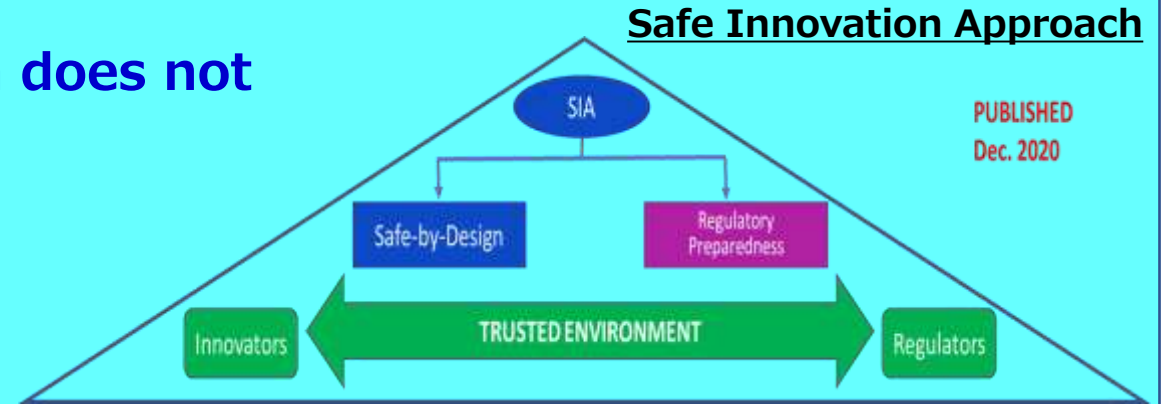
◆ Further response and strengthening of cooperation

- **In Europe, NBCI and NBCI member companies (ZEON, RESONAC) cooperate with JBCE (Japan Business Council in Europe) to submit opinions based on scientific evidence.**

The harmfulness of CNTs is not due solely to geometric factors of length and thickness.

【NBCI's goals】

- to ensure that the proposed CLP regulation does not lead to the inclusion of REACH SVHC lists, NBCI identifies the actual mechanisms that influence hazards of CNT and enables risk management, to aim for both innovation and safety.



【Priority Responses】

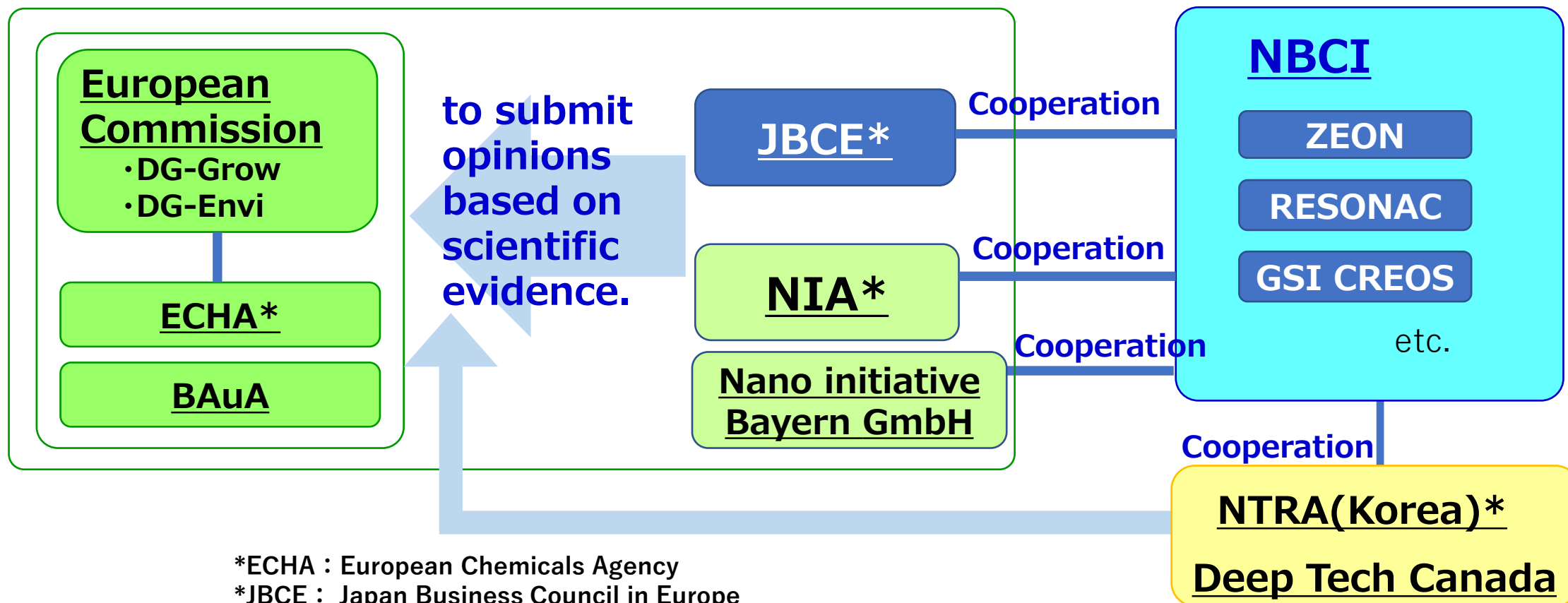
- **Priority 1:** to establish a research system to understand the true mechanism behind the carcinogenicity of CNTs.
- **Priority 2:** to research, create guidelines, and form rules to reduce exposure based on hazards.
- **Priority 3:** to collaborate with international nanotechnology organizations in order to strengthen ability to submit opinions based on scientific evidence to European Commission.

Collaborative network

with International nanotechnology organizations

Purpose: to strengthen communication power as an industry

regarding the European regulation on CNTs



*ECHA : European Chemicals Agency

*JBCE : Japan Business Council in Europe

*NIA : Nanotechnology Industries Association

*NTRA : Nanotechnology Research Association of Korea

<https://www.nbci.jp/en/>

Search keyword
nbci

Nanotechnology Business Creation Initiative(NBCI)
Tokyo YWCA building. 3F
1-8-11, Kandasurugadai,
Chiyoda-ku, Tokyo 101-0062, JAPAN

Inquiry: <https://www.nbci.jp/cgi-bin/inquiry.cgi>