

New AIGA Board

The AIGA board met in Shanghai for the 51st Board and Annual General Meeting on 27 November 2018.

The 2016-2018 office term for the AIGA Board ended at this meeting and a new Board was constituted for the term of office from 2018 to 2020.

Francois Abrial, VP-Asia Pacific of Air Liquide was unanimously elected for the Board President's position. Other office bearers were also elected for the 2016-2018 term at the 27 Nov 2018 meeting.

Board members thanked outgoing President Wilbur Mok, President-Air Products Asia for efficiently leading the activities of AIGA for the period 2016-2018 when several new programs have been successfully launched by AIGA towards enhancing its' effort to promote safety in the region.

Full List of elected Board Members:

President	: Francois Abrial (Air Liquide)
Vice President	: Sanjiv Lamba (Linde Asia)
Treasurer	: Norikazu Ishikawa (Taiyo Nippon Sanso)
Secretary	: Werner Hickel (Messer China)
Members	: Wilbur Mok (Air Products)
	: John Panikar (Praxair)**
	: Makoto Horiguchi (Iwatani Corporation)
Ex-Officio	: Haris Farooqi (Air Products), Chairman of Technical Committee
	: Milan Sarkar, Secretary General (AIGA)

**Note: Since resigned from Board in March 2019

Did You Know ?

- AIGA was established on 13 Dec 2002 on receiving registration from Registrar of Societies (ROS) Singapore as a non-profit organisation for promoting health, safety and environmental excellence associated with Industrial Gases Industry in Asia
- First Board Meeting of AIGA was held on 24 Jan 2003 in the office of BOC Singapore

Message from Board President:



Francois Abrial
President, AIGA

Dear Colleagues and Friends,

It gives me pleasure and honour to be associated with AIGA and am looking forward to speeding up the activities that have already been undertaken by the association along with national affiliates to raise the standard of safety, occupational health and environmental care across Asia in the manufacture, use and handling of industrial gases. AIGA, established in 2002, have made tremendous contribution

in promoting safety, health and conservation of the environment which are of paramount importance for the success and sustainability of industrial gases industry in the Asia region. This is being carried out not only through publication of more than a hundred safety standards & guidelines, but also through hosting of Safety Seminars and work shops in association with various Country Gas Associations in Asia in creating awareness on current topics, as well as publication of Training Packages, Safety Bulletins and Safety Posters. AIGA publications have wealth of knowledge as prepared by Industry Experts in Asia in consultations with Global Experts in USA, Europe and Japan.

I wholeheartedly appreciate AIGA Technical Committee and Work Group members for their tremendous voluntary efforts. Safety in manufacturing and handling of industrial gases always remain to be our key focus, but transportation safety continues to be a hot topic, for reasons that are very unique to Asia. AIGA has embarked upon specific new programs and activities that would help improve safety in product transportation and make our drivers safer. AIGA is also focussing on spreading the awareness and best practices in Process Safety. Prevention of accidents and injuries in occupational safety, especially in manual handling of cylinders remains to be another focus area along with product stewardship and other key areas of safety.

AIGA intends to continue to deepen its partnership with other regional and national associations and regulatory authorities in Asia so as to contribute more towards safety, health, security and the environment. I would like to thank you for your continued support and cooperation for our activities.

With best wishes,

AIGA Safety Seminars in 2018

AIGA, working jointly with various National Associations in Asia, successfully held 8 safety seminars in the year 2018.

AIGA is pleased that all the safety seminars saw high quality presentations from some of the experts from AIGA member companies in their respective fields. It was also heartening to note that the seminars in

Taiwan and Korea drew more than 200 participants.

- Taiwan Seminar was cosponsored by OSHA and NTUT (National Technical University Taiwan).
- China seminar on Safe Handling of ESG was held jointly with CIGIA what helped to further strengthen the cooperation between the two associations.

- AGII Indonesia held the safety seminar on the sides of its 10th Congress which was held in East Surabaya after a gap of 8 years.

The list of seminars held in 2018 are given in the below table and highlighted pictures are shown on last page.

Host NA	Seminar Topic	Venue/ City	Date held	# of Delegates	AIGA Speakers
THPGIA, Taiwan	Oxygen Safety	Taipei	11 Sept 2018	>200	5 Speakers
AIGA China Rep Office	Safety in Handling and Transport of ESG	Shanghai	27 Apr 2018	>125	1 Speaker
AIGA China Rep Office	Interpretation of JT/T 617 Standards by Members	Shanghai	22 Nov 2018	70	1 Speaker
GIA, India	Safety in Medical Gases Supply Systems for Health Care Facilities	Mumbai	6 Sept 2018	>140	1 Speaker
IGAS, Singapore	Flammable & ESG Safety	Singapore	18 Oct 2018	>180	3 Speakers
AGII, Indonesia	Mixed Topics	Surabaya	6 July 2018	>150	1 Speaker
KISGA, Korea	ESG Safety	Seoul	14 Nov 2018	200	1 Speaker
FMM-MIGMA, Malaysia	Safety in use of Compressed Gases	Johor	23 Oct 2018	>70	1 Speaker

Planned seminars in 2019

In 2019, AIGA continues to work with the national associations to organise safety seminars which could significantly contribute to enhancing safety awareness among people associated with industrial gases industry in Asia region.

AIGA-affiliated associations in China, India, Korea, Taiwan and Singapore have already started planning for safety seminars in their respective countries in the current year with AIGA as co-host.

Safety with manufacturing, storage and handling of Oxygen continues to remain a focus for Gas Industry

and thus India Association have already made plans to hold a safety seminar on Oxygen Safety on 11 Sept 2019 in the city of Hyderabad.

KISGA, Korea have made plans to hold a safety seminar on Electronic and Speciality Gases on 13 Nov in Seoul.

International Harmonisation Update

The four regional associations in USA (CGA), Europe (EIGA), Japan (JIMGA) and Asia (AIGA) met in Hotel Grand Copthorne on Waterfront, Singapore on 26-27 Feb 2019 for the biannual meeting of International Harmonisation Council (IHC). This was the 44th meeting of IHC and was hosted by AIGA. "Observers" from some of the IOMA Global Committee member companies were also present in the meeting.

Milan Sarkar, Secretary General of AIGA Chaired the meeting, which was well attended by 15 delegates from IHC, AIGA TC & Work Groups and other invitees from IGAS, Singapore.

Some of the key items on which the group focussed at the meeting are

- Review of progress with of ongoing harmonisation projects
- Agree on new work items for harmonisation
- Promoting harmonisation work among various stakeholders

- How IHC can collaborate with other Standard writing bodies viz ISO, UN, ISBT etc
- Ways to link Harmonisation work with DJSI
- Revise Harmonisation work process to shorten the cycle time of publication work
- New regulatory issues in Europe with inspection of flat bottom tanks

AIGA has been actively supporting the harmonisation work being carried out by IHC by nominating Subject Matter Experts from member companies in the Joint

Work Groups. AIGA also remained committed in promoting the benefits and purpose of globally harmonised standards among member companies, national associations and regulatory authorities in the countries of Asia region.

The next IHC Meeting is scheduled on 21-22 Aug 2019 and will be hosted by the Compressed Gases Association (CGA), in Montreal, Canada. The meeting following the next one will be hosted by JIMGA in Yokohama, Japan in 1Q 2020.



IHC Meeting held in Singapore on 27-28 Feb 2019

Technical Committee & Work Groups

AIGA Technical Committee Celebrates A Milestone

The Technical Committee of Asia Industrial Gases Association (AIGA) reached a major milestone when it met for the 50th time 22-23rd January 2019. AIGA Technical Committee oversees and directs programs being carried out by Safety Advisory Group and multiple Work Groups of experts drawn from member companies. The 50th meeting was held with sponsorship of Siam Industrial Gases Association at the Hotel Dusit Princess Srinakarin in Bangkok.

Technical Committee oversees the technical agenda of AIGA. It consists of most senior managers in Health Safety & Environment (HSE) and/or Operations from the member companies in Asia and is currently supported by 7 work groups of experts to focus on specific areas viz General Safety, Transportation, ASU, ESG, Packaged Gases, Medical Gases and Physical Security.

At the 50th meeting, **Haris Farooqi**, Chairman of Technical Committee, commented "This is indeed a milestone event! I congratulate all current members and thank all the past members for their contribution over last 15 years that helped to develop AIGA activities and publications. I strongly believe AIGA has been effective in making improvements in safety, health and environmental compliance in the industrial gases industry in Asia".

This milestone event was covered by Gasworld News on 20 Feb 2019 in www.gasworld.com



AIGA & SIGA Members at the 50th Meeting of AIGA TC in Bangkok on 22-23 Jan 2019

Changes in Work Group Representatives from AIGA Members

There were several changes at the Work Groups during 2018-2019.

In Technical Committee (TC) **Zhenxin Qian** replaced Hery Liu as member representing Air Liquide (AL). Henry Liu was associated with AIGA TC for nearly 5 years. There was also a change in the membership of TC from TNSC when Toshiaki Kuwano relinquished the membership to **Takeshi Yamanishi**.

In the Safety Advisory Group, **Venkatadas Devisetty** (legacy Praxair, now Linde Plc) was elected as the Chairperson in place of Alberic de Mareschal (AL) who relinquished the membership of SAG to **Lim Choon Meng** after successfully managing the activities as Chairperson and also as a member representing AL for over 4 years. There was also a change in the member from Iwatani as Md Dani has passed on the membership to **Wahidin. Md Dani** has now been nominated as member of Packaged Gases Work Group.

In Electronic and Speciality Gases Work Group, **Wang Bin WU** joined as member and as Chairperson in place of Margaret Ang of AL. In ASU & Large Facilities Work Group, **Noritake Ikeda** replaced Huang Junjie of TNSC and in Packaged Gases Work Group, **Phung Eng Wei** replaced Tan Chin Tee from TNSC. There was also a change in membership of Medical Gases Work Group when Koujiro Hirao of TNSC relinquished his membership to Wilson Tan.

There were multiple changes in the Transportation WGs as well. **Shao Haiyun** of Air Products (AP) became a member in Tr WG-A and so is did **Eric Cao** from Linde Plc. In Tr WG-B there was also change in TNSC representative when **Chanikarn Bakloy** replaced N Pongthep.

AIGA remains grateful to all the outgoing members for their commitment and contributions to the activities and warmly welcomes all the new members in the TC and Work Groups and wishes that their expertise will further enrich the programs of AIGA.

Technical Committee Meetings

AIGA Technical Committee (TC) has been visiting National Associations (NAs) and jointly holding its triannual TC meetings to network and enhance engagement and cooperation with the Nas.

In 2018-2019 these meetings were held in Taipei City, Bangkok and Kuala Lumpur with the members from THPGIA, SIGA and FMM-MIGMA (the respective country associations for Industrial Gases Industry affiliated to AIGA) who co-hosted the meetings. Face to face meetings with the representatives of National Associations helps AIGA TC understand the current concerns and opportunities with regard to safety and associated regulations in the various countries in Asia.

New Programs

AIGA Technical Committee and Work Groups have launched several programs and initiatives in the past 12 to 18 months to focus on some of the critical areas of safety. Learning from past accidents and incidents provided the direction required on taking up these initiatives. One such initiative was to focus on High Severity Product Vehicle Accidents (those resulting into roll overs, major human consequence, significant damage to equipment or product release). Regular data collection and analysis provided meaningful insights into the root causes and what preventive/corrective measures can be taken. AIGA believes this work will surely be useful to all associated with transportation of products in Industrial Gases Industry in Asia.

AIGA SAG is also currently working on a project to understand problems with work-related injuries and analysing the data to determine areas to focus to mitigate the risks.



AIGA & FMM-MIGMA members at the 51st Meeting of AIGA TC in Kuala Lumpur on 28-29 May 2019

Technical Committee & Work Groups

Work Groups	Technical Committee	Safety Advisory Group	Medical Gases WG	Packaged Gases	Electronic Specialty Gases WG	Transportation WG(A)	Transportation WG(B)	ASU & Large Facilities WG	Security WG
Air Liquide	Zhenxin Qian	Choon Meng Lim	Jerry Guo	Kok Khoon Toh	Wang Bin WU/ Alf Hsu	Yu Ridong / Huang Sha	Vera Jaragaruna / Jason Thong	Lihua Tong	Erika Love
Air Products	Haris Farooqi	Joey Chen	Mark Garrett	Mark Garrett	Young-Soo Kim** / Elvin Tham	Shao Haiyuan / Cloud LIN	Nicholas Young/ Amorn Jungskal	Jerry LU	Kalimuthu Thiagu
Legacy Linde	-	-	Sawet Thananirun	Ramana Vutukuru	Pornchai Lerk Annun	Eric Cao	Md Aamir / Chutamat Mekmahaprom	Michael P Wood	Fawzy Din
Iwatani	Ang Lee San	Wahidin	-	Md Dani	Dr Kunihiko Koike	-	Ang Lee San	-	Ang Lee San
Messer China	Du Pu	Thomas Rubbert	-	-	LI Hong Wei	Xiuping Yu	-	-	Thomas Rubbert
Taiyo Nippon Sanso	Takeshi Yamanishi	Aleron Tan	Wilson Tan	Phung EngWei	CH Ju	Kazuhiko Fujie	Chanikarn Baykloy(Ms)	Wong Tuck Hoon / Noritake Ikeda	Aleron Tan
Legacy Praxair	MVS Ramakrishna	Venkatadas Devisetty	Arindam Das	Arindam Das		Cyrus Liu	Adisorn Ruangdej	Gao Guorong	
Co-opted	Milan Sarkar Secretary General								

Note: Names in Blue are the Chairpersons **Honourary member from Versum Materials

AIGA Work Plan 2019

In consultation with the Work Groups and the Board, the Technical Committee has rolled out the 2019 Work Plan.

Highlights of the plan include the following:

- Work on Strategies for 'Enhancing field level use of AIGA and Harmonised Publications'
- Enhance field level engagement by networking with National Associations in Asia
- Continued focus in reducing High Severity Product Vehicle Accidents (HS-PVAs)
- Participation in global harmonisation of safety publications/guidelines undertaken at International Harmonisation Council
- Promote awareness on Process Safety Management in industrial gases industry in Asia
- Higher level of interaction with CIGIA in China and AIIGMA in India to develop collaboration on projects of mutual interest that promote safety and/or protect health & environment
- Supporting National Associations in organizing safety seminars in the countries in Asia
- Use of digital tools to spread the safety communication and publications deeper and faster
- Enhance activities to promote awareness and focus on Process Safety
- Prevention of injuries related to occupational safety with specific focus on injuries in cylinder handling.

AIGA Publication Update

Recent Publications between July 2018 and June 2019:

New AIGA Publications:

- Safety Poster SP 06/19 – Safety in Manual Handling of Cylinders
- Safety Bulletin SB 12/18 – Transport Safety Challenges and Strategies
- Safety Bulletin SB 13/18 – CO₂ Physiological Hazard and "Not Just an Asphyxiant"
- Safety Bulletin SB 14/19 – Safety in use of Liquid Nitrogen in Molecular Cooking
- Document AIGA 101/19 – Safety guide on Cryo Tanker Product Conversion
- Document AIGA 102/19 – Guidelines on Prevention of Truck Wheel Detachment
- Document AIGA 103/19 – Guidelines for safe and hygienic handling of Dry Ice
- Training Package 24/19 – Recent (2018) accidents incidents in gases industry in Asia
- Position Paper PP-05/18 – Long term durability of steel Gas Cylinders

Revised AIGA Publications:

- Document AIGA 010/19 – Management of Change
- Position Paper PP-02/18 – MOU, Gas Cylinder Ownership & Responsibilities

Several revised and new globally harmonised publications were also released by AIGA during this period as part of its participation in the activities of International Harmonisation Council.

Work In Progress:

- Reference Guide on Industrial and Medical Gas Cylinder Colour Coding Practices in Asia (new AIGA publication)
- Guidelines on How to Track and Manage Aggressive Drivers (new AIGA Publication)
- Safety Poster on Process Safety Management (new AIGA publication)
- Alternative to Hydraulic Testing of Gas Cylinders (new AIGA publication)
- Safety principles for pressure regulators on medical oxygen gas cylinders (new AIGA publication)
- Guidelines on minimum safety requirement for customer and distributors' pickup trucks (new AIGA publication)
- Safe handling of externally contaminated medical oxygen cylinders (new harmonised publication)
- Hyco plant gas leak detection system (new harmonised publication)
- Safe handling of liquid containers on wheelbases (new harmonised publication)
- Validation of ASU and distribution equipment for medical gas filling
- Vacuum jacketed piping in cryogenic service

National Association Round Up

AIGA makes significant progress in setting up of a Representative Office in Vietnam:

AIGA in its endeavour to spread the awareness on safety, health and environment associated with Industrial Gases Industry in Vietnam has been working on establishing a Representative Office in Ha Noi.

MOUs for Collaboration were signed recently by AIGA with VINACHEMIA (Vietnam Chemical Agency) and DWS (Department of Work Safety). The two separate MOUs were with respect of implementation of development assistance activities promoting chemical safety, occupational safety and health in the field of production, distribution and use of industrial gases for the period 2019-2021 between the two key Government Departments of Vietnam and AIGA.

Mr Nguyen Van Thanh, General Director signed one of the MOUs on 13 Feb 2019 on behalf of VINACHEMIA and Mr Ha Tat Thang, General Director, signed the other MOU on behalf of DWS. Milan Sarkar, Secretary General, signed the MOUs on behalf of AIGA in Ha Noi. A pro tem group comprising of representatives from seven Industrial Gases Companies in Vietnam (Air Liquide, Air Water, Linde, Messer, SIG, TOMOE and VJG) has been formed to spearhead the initiatives. AIGA expects to get the Vietnam Rep Office started within the year 2019.



Signing of MoUs with VINACHEMIA and DWS in Ha Noi



Updates from AIGA China Representative Office:

In the beginning of 2019 Steven Fang (Linde China) passed on the responsibilities of Chairman of Steering Committee of AIGA China Representative Office to Saw Choon Seong (Air Products China) after successfully leading the activities of the China Rep Office for nearly 5 years.

Liu Lubing of Air Liquide relinquished the position of Chairman of Technical Committee to Shi Kaifei of Linde who was unanimously elected.

AIGA also heartily welcomes **Hangzou Hang Yang** Gases as an Associate Member as they were keen to participate in the activities of China Rep Office by joining the Steering Committee.

Since year 2018, AIGA China have established communication and networking with several key authorities and agencies in the country, who are engaged in drafting safety and technical standards pertaining to Industrial and Speciality Gases. AIGA China members have been able to provide useful technical comments/suggestions during the drafting stage in order to provide the gas industry views and expert opinion.

2019 China ESG Academic Seminar was held in May 13-15 in Wuhan Optics Valley, which was organized by Gas Branch of National Technical Committee on Semiconductor Equipment and Materials of Standardization Administration of China and Hubei Standardization and Quality Institution.

Having been invited to participate for the first time, AIGA contributed two expert speakers to this seminar. The topic "Determination of ESG mixture GHS/GB classification" made by Mr. Huang Hui of Linde Lienhwa China and "SIH4 & NH3 Safety" made by Mr. Fang Song of Air Liquide China got positive feedback from audience.

Updates from Gas Industries Association India (GIA):

GIA TC under the Chairmanship of Prabuddha Dhar (Linde India) has recently formed a Packaged Gases Work Group in order to focus on areas concerning safety with filling, storage and handling of compressed gases in cylinders. In short span of time the WG has already published three useful documents viz a Training Package on Safety Handling of Portable Cryogenic Containers, a guideline on Minimum Safety Requirement for HP Cylinder Test Station and another guideline on Minimum Safety Requirement of HP Cylinder Filling Station.

AIGA and IGAS collaboration with Authorities in Singapore and Appreciation for the contributions to Member Company Technical Experts:

Aaron Kalaichelvan (Air Product), as Chairman of IGAS Technical Committee, is working on getting SS639 committee to do a public launch. SS 639: Part 1, 2018 (COP for Filling, Inspection, Testing and Maintenance of Gas Cylinder for the Storage and Transport of Compressed Gases) replaced the old code of practice CP-12. Vutukuru Ramana (Linde Plc), KK Toh (Air Liquide), Tan Chin Tee (Leeden Gases) and Elvin Tham (Air Products) contributed under the convenorship of Thierry Schrimpf (Air Liquid) as experts from Gas Industry who assisted the Technical Committee of SS 639 in the preparation of this standard.

Elvin Tham (Air Products), Vutukuru Ramana (Linde Plc) and Kok Khoo Toh (Air Liquide), all active members of AIGA technical work groups, were presented with a National Merit award by Enterprise Singapore for their contribution to work being carried out by Enterprise Singapore that would help promote product safety among consumers.

Nicholas Yong (Air Products) is currently working with SCIC and other Government bodies in Singapore as convenor for developing LNG TR (Technical Reference). Nicholas is an active member of technical work groups of AIGA and IGAS.

Updates from Taiwan High Pressure Gas Industries Association (THPGIA)

LU Yung-Cheng of Air Products Taiwan took over the role of Board President of THPGIA from John Miao of Linde Lienhwa. THPGIA has done excellent work in translating and publishing multiple AIGA publications in Chinese. AIGA also reciprocated by providing five speakers at the International Safety Seminar organized by THPGIA at NTUT campus in Taipei on 11 Sept 2018.

Updates from Korea Industrial and Speciality Gases Association (KISGA)

AirFirst Co became a member of KISGA in May 2019 and is being represented by Li Su Yeon (President) in KISGA Board.

In 2018, KISGA in cooperation with Air Products Korea, organised a practical training session on recovery of Tractor Trailer after a roll over. This was a well-coordinated training with practical demonstration by experts.



Practical Training of recovering a cryogenic transport tanker after a Roll Over



Updates from Siam Industrial Gases Association (SIGA)

SIGA Board elected Vipa Jinda (Ms) of Praxair Thailand (now a Linde Plc company) as President of the Board after the resignation of Wuthichart Ananthasuthivira.

SIGA Technical Committee is working with authorities to bring in safety discipline in the storage of gas cylinders in retail stores and also in establishing best practices in condemnation process for those cylinders failing during periodic testing and inspection.

Updates from Associasi Gas Industri Indonesia (AGII)

Pak Afdal Marda from Aneka Gases took charge as Secretary General of AGII from Pak Agus Purnomo. AIGA congratulates Pak Afdal and looks forward to enhancement in the collaboration and cooperation between the two major industrial gases associations.



Updates from Philippines Confederation of Gas Industries (PCIGI)

Vinayak Kembhavi of Linde Philippines took over the role of Board President of PCIGI which was vacant due to resignation of Alex Co. AIGA is closely collaborating with PCIGI Technical Committee to boost the safety and technical activities of the association.

Updates from Malaysian Gas Manufacturers Association (MIGMA)

MIGMA hosted the 51st Meeting of AIGA Technical Committee in Wisma-FMM on 28-29 May 2019 which was attended by members of both associations.

MIGMA plans to focus on enhancing safety in cylinder transportation by encouraging vertical transportation and also for making compulsory use of cylinder valve caps or guards. MIGMA held a seminar on 'Safe Use of Compressed Gases' on 23 Oct 2018 in Johor Bahru along with a field demonstration session on "safe handling of Oxy-Acetylene and Liquid Nitrogen Systems at a nearby facility which was found to be quite useful to the participants.

Highlights from recent events



Haris Farooqi (AIGA TC Chairman) speaking at the 11 Sept 2018 Safety Seminar of THPGIA, Taiwan



Safety Seminar of FMM-MIGMA held in Johor Bahru in Malaysia on 23 Oct 2018



YS Kim of Versum Materials presenting at the KISGA Safety Seminar in Seoul on 14 Nov 2018



Claudia Wang making a presentation on AIGA at the ESG Academic Seminar on 13-15 May 2019 in Wuhan, China



Cyrus Liu (inset photo) of Praxair speaking at AIGA seminar on Chinese Regulations on Transportation of Dangerous Goods (JT/T 617-2018) on 22 Nov 2018 in Shanghai



AIGA Sec. Gen. and GIA Board Members at the Inauguration of Safety Seminar on Medical Gases Installation in Mumbai on 6 Sep 2018



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