

Confederation of Indian Industry Conference on Chemistry Everywhere National Chemicals Inventory - First Step ChemSource Launched

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CII organised the conference for addressing the challenges of modern India followed by first step

towards the National Chemical Inventory launch of Chemstreet and ChemSource, which aims to be repository information on chemicals (types and amounts consumed through indigenous production or imports) in the country. It was held on 26th November 2015 at Hotel Trident attended by stakeholders, captains of industry, academia, government and students.



Mr. Nadir Godrej, Chairman, CII National Committee on Chemicals and Managing Director, Godrej Industries Ltd welcomed the audience and made a poetic rendition on chemistry.

The food we eat, the drugs we take
and almost everything we make
have chemicals at their base.
We can easily make the case
that chemicals make life worth living
and chemistry is always giving.
Sometimes of course there could be harm
But chemistry has a special charm
no matter what the want or need
with chemistry we can succeed.
So all of us should really see
the benefits of chemistry
and yet in the public mind
quite strangely you will often find
not a feeling of good cheer
but an all pervading fear.
But surely if we have the will
we can summon up the skill
to make our processes all green
and ensure environment's clean.
Some of course begrudge the cost
but we shouldn't think that something's lost.
Reducing waste can make us rich
so we should all want to switch.

Now greenhouse gases are a bane
and reducing them may seem a pain.
As solar energy falls in price
if we decide to do what's nice
as long as we properly plan it
we can save both profit and planet.
And through chemistry everywhere
we hope everyone will share
our view that chemistry's a solution
and not just cause of pollution. Mr.S.Biswas
is here today
and he will show us the way
on the journey of Chemstreet
which in due course will complete.
Right now we have just one lane
but it will be a major gain.
The data found in Chemsorce
will prove to be a good resource.
I've said my bit and therefore now
I'll ask my friend Sudhir from Dow
To explain to you in greater detail
how all of us can avail
the benefits of chemistry
that some, somehow, still fail to see.



Mr. Sudhir Shenoy, CEO, Dow Chemical International Private Ltd said that every single thing needed for our life and sustenance is provided by the chemical industry. If the industry does

not grow, it will disable growth in many other sectors. Development of home water purification systems is a case in point in India, which is driven by chemistry. Chemicals constitute 5½% of exports. Our share is a mere 3% of global specialty chemicals market. Self-regulation by industry is best and there is room for improvement on issues related to safety, health and environment. Regulation makers, government and industry (proactively with REACH) work together in a collaborative manner and the National Chemical Inventory is a step in that direction.

Mr. Shenoy lamented about NGOs campaign “Say no to plastics” without realising that we have to be responsible in terms how we manage it. Chemical industry polluting the environment is a myth of the common man since voice of chemical industry has not been heard. Chemistry is enabler and chemical industry has been the bedrock for sustainable innovation whether solar panels, biofuels, biodegradable plastics, recycled plastics etc. The need of the hour is access to clean drinking water from ground water containing salts and the only technology possible is reverse osmosis; low or zero VOC paints and pest management. India has the lowest per hectare productivity from fields and the need for pesticides, weedicides, insecticides, nutrients, fertilisers are related to chemistry.

Circular economy working together needs focus and hence we have to reach out to unorganised sector, develop chemical industry together since there are enough opportunities for huge unearthed potential. Efficiently regulated industry will help manufacturing sector and also underscore requirements of stakeholders in circular economy and all work together with the same goal as sustainable path breaking innovation.

• **Dr. Raman Ramachandran**, Chairman & Managing Director, BASF India Ltd spoke on the challenges humanity face. Chemistry is enabler and emerging countries like India that benefitted from innovation from

the West may not be able to depend on them and have to determine their own future when it comes to certain technologies. In Singapore, consequences of



higher GDP and per capita increase in consumption contributed to resource utilisation. If nothing is done in India about climate change and its consequences, as many as 45-mn people would be forced below poverty line by the next 20 years according to the World Bank. This also reflects on food challenge. Science, technology and particularly chemistry help overcome the challenges and that is what we have to promote and talk to society at large, which have suspicious view about chemistry and chemical industry.

Waste management is yet another challenge due to huge amounts of waste generated in industries and need to tackle the same. In Lebanon with 3-mn population, municipality and government have stopped collecting waste because they have run out of landfills. 50% of waste is organic matter, which does not degrade and contributes to climate change and technology like biodegradable compostable matter can deal with it. Segregate waste at point of collection into organic and inorganic. Low cost housing calls for housing challenge. Chemistry helps in making cement flow and set quickly.

Technologies developed in the West are not always appropriate for us and we will have to determine our own technologies, innovate and find solutions to our own problems. Co-creation and collaboration is the need between industry and stakeholders. This is also a powerful way to communicate what chemistry and technology can do. Industry and academic institutions involved with chemistry, science and technology need to step up campaign and commitment to making people understand that the challenges would only be addressed by embracing science.



Mr. Richard Porte, Head Strategic Partnerships, Royal Society of Chemistry spoke on role of RSC aiming to do in India. They are participating chemistry everywhere in CII. They are charity and exist to advance chemical sciences. They have 3 strengths

viz. Knowledge (provide information), skills and emerging areas of science, chemistry, biology and nanomaterials etc. They recognise expertise in chemistry education and tackle the challenges society face and provide safety, energy, storage, distribution, use of less harmful chemicals and alternatives. Charter set to encourage, practice research and innovation to back the society and work with organisations. Taking on expertise in chemistry education, work with Indian chemists to address problems in Indian context. Select high potential scientists and engineers, help them develop communication skills, take success stories and promote them to science community and beyond.

• **Dr. Swaminathn Sivaram**, CSIR Bhatnagar Fellow, National Chemical Laboratory said the challenge is preaching non-believers and the threat to Indian chemical industry viz. perception of chemistry as



science and products as problems. Lack of Foreign Direct Investment (FDI) in chemical industry in India is causing concern. Despite enjoying 100% FDI, it was 2,500 crores regardless of infrastructure, fiscal policies and energy cost because global chemical market pile is shrinking to 70% capacities and even knowledge intensive products may not be attractive here. No new chemical industries have sprung up for the past 10 years and some of the existing players are closing down. He urged that the industry and the government work together and create joint logistic strategy as business model. Industry needs to create the momentum for change in the system by doing proactively instead of waiting for things to happen.

Electronic chip and electric mobility is driven by batteries made by electrochemical science which consists of anode, cathode and electrolyte separators which are either inorganic or organic materials. Solar energy - chemical industry should discuss about this form of energy. Pesticides were advocated in the past to improve agriculture and now create negative emotion in people's minds. Similarly, plastics bring in negative emotions. We have to correct public's emotions, understand and react in a conducive manner. Our strengths should exploit the global markets rather than mimic the foreigners. What is happening in the chemical industry for the last 25 years? declining innovation i.e. innovation draught

around the world. When the growth is low where do you find resources for investments in long term? India has to build its own development phase and strength in chemical industry in terms of innovation, research and ability to serve the market.

We need to proactively communicate chemistry to young people if the industry has to build a base for future. We don't export chemicals in high technology sectors unlike commodity sectors. We are not ready to defend our markets and if this trend continues for another 25 years, we will import everything into this country. Except C2 and C3 feed stocks (not available for merchant markets), we do not have any other feed stocks. If people want to develop chemical industry in India, they must build scale, skills and reach. Growth sustainability is expensive in the short term and will only pay in long term. No Indian chemical industry has a branded product in the market. If you don't create a brand, you don't reach market perception in a way that has reach viz. Teflon. We are poor in branding chemistry than chemicals. Reverse engineering of competitive products; incremental innovation are nothing to be scoffed at. Disruptive innovation won't happen every day. Dr. Sivram concluded that we must communicate the benefits of chemistry to the society and create its perception to reach out to the society at large.

• **Mr. Samir K. Biswas**, Joint Secretary, Government of India, Ministry of Chemicals & Fertilizers, Department of Chemicals and Petrochemicals said that with focus of 'Make in India', chemical industry is crucial for growth of the nation. If the nation has to



grow, the chemical industry has to grow. Government is creating national inventory of chemicals so that the nation and the world know the chemicals to trade with. Inventorisation of chemicals will provide sound foundation for national chemical policy and chemicals required for end-user industries besides demand-

supply scenario. It will also enable the government for negotiating bilateral or multilateral trade agreements with other countries.

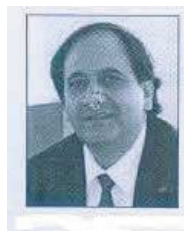
Mr. Biswas stated that South Korea has taken the chemicals industry as the main driver for all their industries. They have identified 10 core areas and are planning to cater to not just their own, but the whole

world's needs for the next decade. We need a similar kind of thinking in India and concrete action plans and not just words. He averred they will provide proactively whatever facilitation or support is required by the industry. The government is there to support and facilitate the chemical industry and they will see that nothing comes in the way of its development.

· **Mr. Shisher Kumra**, Executive Director, Sustainability Support Services, (Europe) conceived a summary report on global developments in chemicals regulations and for shaping draft Indian chemical policy. Showcasing ChemSource demonstration of the database, Mr. Kumra expressed that the first step towards National Chemicals Inventory was launched on the occasion.



Proposing Vote of Thanks, **Mr. Ajay Durrani**, Managing Director, Covestro (India) Private Ltd referred to the CII commitment to 'Chemistry Everywhere' and urged industrialists to intensify support to this campaign. He summarised the speeches and offered special thanks to Mr. Samir Biswas, eminent speakers and the audience. Chemistry is vital link to country's sustainable growth and would provide environmental friendly solutions not just to India but the whole world. He hoped for action plan in the next session to support the initiative.



ICC ACTIVITIES...

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Example Setup for Multi-Stream Gas Application and Key User Benefits for Toxic Leak Detection with the help of a case study on 'Toxic Leak Detection in Chemical Plant'.

IPC members were happy to learn about the new technology and interacted with the speaker on the subject.

After the presentation the discussions of IPC were carried on. The issues pertinent to the Phosgene industry were discussed under the guidance of **Dr. Atul Khettry, Chairman, IPC** and Site Head, Covestro India Pvt. Ltd., Ankleshwar. Development of Phosgene detection badges indigenously was explored. Dr. Khettry also screened a video of US Chemical Safety Board on an incident of Phosgene exposure at a plant in the USA in January 2010. Based on the video safety

measures and methods observed at the IPC member companies were discussed and shared. 3-year plan of IPC was also brainstormed.

The meeting was followed by lunch and warm hospitality of the staff of Atul Ltd. After lunch a training session on "**Phosgene Exposure - Diagnosis and Treatment**" was conducted by **Dr. Shelly Sagar**, Medical officer, Bayer CropScience for the officials of Atul Ltd. in the state-of-the-art auditorium at their Learning Centre.

Dr. Sagar briefed in her presentation about diagnosis and treatment of Phosgene Inhalation" and exposure. She covered the clinical aspect and medical emergency response. Questions and answers with the audience were taken during the presentation. Participants found the information very useful.

The next meeting of IPC (Indian Phosgene Council) will take place in May - June 2016.

INDUSTRIAL APP...

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green chemistry as the concept of chemistry and engineering with focus on design and development, processes and chemicals that reduce or eliminate the use and generation of hazardous substances. Ionic Liquids combined with green chemistry provide an opportunity to produce and support innovative and evolutionary, environmentally-aware research and development efforts, focused toward developing and sustaining future industrial processes and products based on positive environmental and economic advances; vision of global sustainability and ILs research and development efforts.

Prof Douglas Macfarlane, Monash University, Australia spoke on "Ionic Liquids for sustainable energy



storage" Sustainable energy and use in creating applications of ILs in a variety of device technologies including advanced batteries, capacitors, thermocells and dye sensitized solar cells. IL electrolyte systems offer unique advantages compared to traditional electrolytes. The cell can charge more rapidly than traditional solvent-based electrolytes because of the massively high Lithium ion concentration that is present in the electrolyte. IL based systems are also finding application in emerging sodium battery designs offering the potential of a safer, lower cost battery technology.