

#### **Profitability from Industrial Green Chemistry and Engineering**

Venue: Ramada Powai Hotel And Convention Centre, Mumbai, India

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2025

2023

2021

2019

2017

2015

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2011

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Organized by



2009

www.IndustrialGreenChem.com



#### Vision Theme Approach :



- Ignite awareness of Industrial Green Chemistry & Engineering (IGC&E) amongst the key stakeholders of Chemical Industry
- Inspire industrial leadership to explore economic potential of IGC&E
- Initiate strategic partnerships that offer a competitive edge to deal with environmental and economical challenges
- Identify priority challenges of Scale-up and Commercialization of IGC&E practices
- ✓ Invent core strategies to stay ahead of emerging global regulations on environmental issues
- Innovate means for integrating technologies to eliminate hazard at the design stage as well in the manufacturing processes
- Implement IGC&E practices to achieve the triple bottom line for our Planet, People & Profits
- Industrialization of IGC&E to transform the 20th Century 'Grey Industrial Age' to 21st century 'Green Industrial Age'
- Impact in a tangible way, the quality of air, water & soil through above deliberations.



#### What is IGCW?

- India's dedicated Convention designed to accelerate the implementation & industrialization of Green Chemistry and Engineering (GC&E) practices
- An ecosystem that brings together diverse stakeholders for enabling collaborations to accelerate Green Chemistry implementation in Indian Chemical Industry
- An on-going platform for exploring, exchanging and engaging in GC&E tools, technologies, applications and success stories

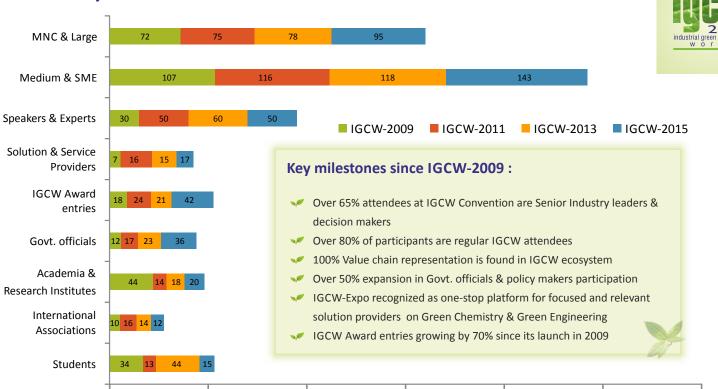


#### 5th IGCW-2017 Objectives:

- Facilitate learning from global green chemistry leaders and experts
- Bring together key stakeholders of Indian Chemical Industry including senior Govt. officials
- b Provide a conducive ecosystem that can accelerate the implementation and industrialization of Green Chemistry and Engineering practices
- Enable learning from Industry peers and practitioners of successful case-studies
- Invite subject-specific solutions and technology providers to showcase at IGCW EXPO
- Encourage collaborative initiatives by offering industrial networking platform to Researchers, Scientists and Technocrats
- Recognise and acknowledge Indian initiatives in GC&E direction through IGCW Awards



#### **IGCW** ecosystem since 2009



# Two days | 6 dimensions | 40+ global experts over 300 chemical community stakeholders' participation



#### **IGCW 2017 Speakers**



Prof. Paul Anastas, Founder, 12 Principles of Green Chemistry and Green Engineering, Director, Centre for Green Chemistry & Green Engineering at Yale, USA



Dr. John Warner Co-Founder, 12 Principles of Green Chemistry President, CTO, Board of Directors, *The Warner Babcock* Institute for Green Chemistry, USA



Dr. David Constable Director, American Chemical Society- Green Chemistry Institute, USA



Prof. Chao-Jun Li, Department of Chemistry, McGill University, Canada



Mr. Nitesh Mehta IGCW Convenor & Founder Director, Newreka Green Synth Technologies Pvt. Ltd., India



#### IGCW 2017 Symposium, 5th & 6th Oct. 2017

- Opportunity to meet & interact with global green chemistry experts
- Designed to bring forth world's best industrial practices and success stories
- Focused interactions with renowned scientists and practitioners of green chemistry
- Over 20 Invited Speakers & experts
- 300+ participants across two days
- Uniquely adapted on the 9-i Theme Approach



Research &

**Delegates Distribution** 

#### Participants will include chief representatives from chemistry-intensive sectors:

- **Pharmaceuticals**
- **Dyes & Pigments**
- **Agro-chemicals**
- **Specialty, Fine and Performance Chemicals**

#### IGCW Symposium structure: Theme Approach



#### Themes: Ignition, Inspiration & Initiation

Day 1 is designed for Chairpersons, Board of Directors, Founders, President, CEOs and other Senior decision makers

#### Themes: Identification, Invention & Innovation

Day 2, pre-lunch is designed for the R&D and Technology leaders such as CTOs, CSOs, R&D Managers, Inventors, Innovators, Consultants, Technocrats, etc.

#### Themes: Implementation, Industrialization & Impact

Day 2, post-lunch is designed for Plant and Operations' personnel, Directors, Presidents, VPs, Plant Managers, EHS Managers



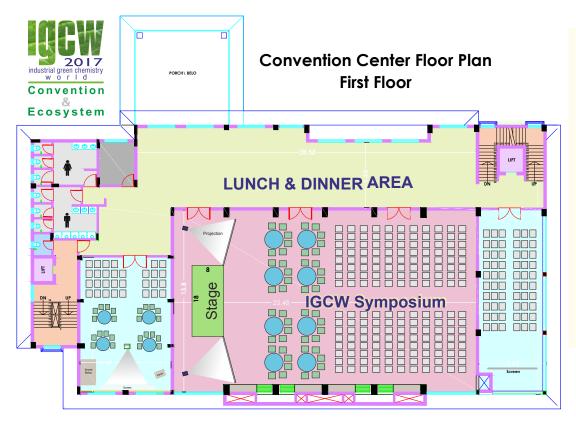
To submit abstract for case-study presentation in IGCW 2017 Symposium on any of the above 9-i Themes, email us at connect@industrialgreenchem.com

#### **IGCW-2017 Convention structure:**



# Two days | 6 dimensions | 40+ global experts over 300 chemical community stakeholders' participation

Day	Time-slots	IGCW Symposium	180° Seminars Series	IGCW EXPO	IGCW Conference	
	09:00 to 13:00 hrs	Themes: Ignition, Inspiration & Initiation For Senior Management of		Green Chemistry &	" Industrial Green Chemistry Awareness "	
Day I, 5 <sup>th</sup> Oct. 2017, Thursday	14:00 to 17:30 hrs	Chemistry-intensive Chemical Companies (Pharma, API, Agro, Dyes & Dye- Intermediates, Fine & Speciality Chemical manufacturing companies)		Green Engineering based Solutions, Services, Products & Technology	for State Pollution Control Boards (by invitation only)	
	18:30 hrs onwards	IGCW Award Evening & Dinner		providers' technology		
Day II, 6 <sup>th</sup> Oct. 2017, Friday	09:00 to	Themes: Identification, Invention & Innovation	1. Green Processes	showcase open on both the days	Research Institutes - Industry interactions for	
	13:00 hrs	For R&D Directors & Scientists	2. Green Catalysts	ŕ		
	14:00 to 17:00 hrs	Theme: Implementation, Industrialization & Impact	3. Green Solvents	(Open to all)	accelerating Green Chemistry Implementation	



#### **Delegate Fees**

\* Exclusive of local taxes as applicable

#### **Industry Fees**

INR 20,000/- for Full Convention INR 12,500/- for Any One day

#### **Academia Fees**

INR 15,000/- for Full Convention INR 9,000/- for Any One day

#### **Student Fees**

INR 5,000/- for Full Convention

#### **International Fees**

USD 600 for Full Convention USD 300 for Any One day



#### Registration details:

- Modes of payment : Cheque / e-Transfer in favor of 'Green ChemisTree Foundation'
- To register & pay online visit http://bit.ly/2gOnYxW OR
- E-mail participant details on connect@industrialgreenchem.com



#### 5<sup>th</sup> Industrial Green Chemistry World - AWARDS





IGCW Awards continue to be an opportunity for Industry, Academia, Researchers and Students to get their Green Chemistry and Green Engineering inspired stories recognized globally.



#### **Past IGCW Award Winners are:**

Categories / Year	2015	2013	2011	2009
Large & MNC	Pidilite Industries Ltd.	Pidilite Industries Ltd. Dr. Reddy's Laboratories Ltd. Or		PI Industries Ltd.
SME	Applied Science Innovation Pvt. Ltd.	Equinox Software & Services Pvt. Ltd.	STEPS	Catapharma Pvt. Ltd.
Academician	Dr. Bhubaneswar Mandal,	Dr. Prabhavathi Devi - IICT	Dr. K. K. Senapati - Guwahati	Dr. J S Yadav - IICT
	IIT-Guwahati		University	
Students	Mr. Saurabh Patankar,	Ms. Sujata Pramanik - University of	Dr. Taher S Dakorwala - GIST	Biosynth Group - IITB
	ICT-Mumbai	Tezpur	Praj Industries Ltd.	
Most Promising		Dr. Taher S Dakorwala - Gharda		
Technology		Institute ofResearch & Technology		
		(GIST)		



#### **IGCW Award categories are:**

- Knowledge Community: Academicians / Researchers / Technocrats
- Students: Students pursuing research for their Masters, Doctoral thesis or Post-doctoral fellowship
  (Shortlisted Nominees in the above Academia Categories will be provided with complimentary Executive pass to attend the full Convention, along with one night accommodation at the Convention Venue and to and for travel reimbursements.)
- Startup and SMEs: Technopreneurial, Enviropreneurial companies, Knowledge based start-ups and small to medium scale industries
- MNC and Large scale Industries: Established MNC or Large scale companies (Shortlisted Nominees in the above Industry Categories will be provided with Complimentary Guest pass)



#### **IGCW 2017 EXPO**

IGCW-2017 offers an apt industrial platform for start-ups, technocrats, green & clean technology companies, Researchers & Scientists to showcase their green chemistry and/or green engineering relevant technologies and solutions at the IGCW-2017 EXPO.



#### Following emerging technologies, products, solutions and /or service providers are invited to showcase at 5<sup>th</sup> IGCW-2017 EXPO:

#### **Immediate solutions**

- Recycle-at-source technologies
- Zero liquid discharge solutions
- Green process simulation solutions
- Process Intensification
- Innovative ETP solutions

#### **Short-term solutions**

- Solvent recovery solutions
- Bio-catalysts
- Sustainable metal catalysts
- Green Additives (Surfactants, Chelates, Reagents, etc.)

#### Mid-term solutions

- Micro-reactor technologies
- Flow chemistry
- Green Engineering solutions
- Super-critical extractions
- Ionic liquid solvents
- Switchable solvents

#### Long-term solutions

- Renewable feedstock
- Bio-based chemicals
- Micro-wave chemistry and engineering

- Education, Training and Publications
- Sustainable recycling solutions
- Waste-valorization
- Bio-membrane technologies, etc.
- Green solvents
- Green reaction medium
- Innovative approach to COD/BOD reduction
- Green analytical chemistry
- Solvent free processes
- Green dyes, pigments and inks
- Life-cycle analysis and Green metrics
- Low toxicity chemicals
- Industrial ecology approach / model
- Green substrates
- Biotech / Nano-tech solutions
- Green synthesis route

#### **Solution & Service Providers** 17 16 15 IGCW-2013

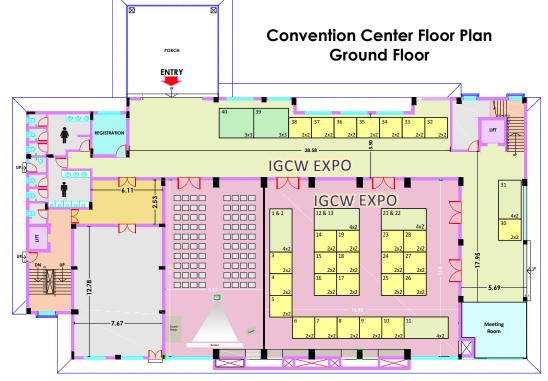
GCW-2011



#### Date & Timing:

Day I - 5th Oct., 2017 (11:00 - 18:00)

Day II - 6th Oct., 2017 (09:00 - 16:00)



- Premium Booth (4x2 Sq. mt.)
- Standard Booth (2x2 Sq. mt.)
- **Booked Booth**

#### IGCW - 2017 EXPO participation fees:

- Premium Booth (4x2 Sq. mt.)
- INR 2,00,000 + Taxes (India)
- USD 3000 (International)
- Standard Booth (2x2 Sq. mt.)
- INR 1,25,000 + Taxes (India)
- USD 2000 (International)

#### **Academia & Research Institutes**

25% discount on above choices



#### IGCW-2017 180° Seminars; Day II - 6th October 2017



180° Seminar

Green Processes, 09:30 - 11:00

Green Solvents, 11:30 - 13:00

Green Catalysts, 14:00 - 15:30

Green Engineering, 16:00 - 17:30

The 180° Seminar focuses on topics which are most relevant for the industrialisation of Green Chemistry and Green Engineering based applications.

These Seminars identify subject-specific impact areas, designed to bringforth a metaphorical "180°" paradigm shift for integrating a 'greener' approach in process-intensive chemical manufacturing units.



#### 180° Seminar Topics

#### **Green Processes** (09:30 to 11:00)

- Designed to bring forth technical insights and know-how for reducing processes' E-factor (Kgs of waste generated / per kg of the final product)
- Case-studies on cost-effective manufacturing processes set at normal pressure and temperature conditions, effective recycle of reaction extraction medium, new route selection, safer reagents and solvents with industrial ecology approach
- Take back insights on green standards and specifications to create a roadmap with tools needed to integrate the greening of a multistep manufacturing process into "green processes"

#### **Green Solvents** (11:30 to 13:00)

- Designed to explore means and solutions for minimizing the environmental impact resulting from the extensive use of solvents in chemical production
- Take back insights on measuring and distinguishing the "greenness" of an alternative solvent
- Get connected to tools for evaluating various comprehensive assessment methodologies for new solvent technologies
- Case-studies on ionic liquids, diutectic liquids, supercritical fluid extractions, water-based reactions, etc to access environmental and economic benefits

#### **Green Catalysts** (14:00 to 15:30)

- The Seminar will bring forth successful case-studies on replacing conventional stoichiometric & metal catalyst by sustainable metal catalysts
- Expanding technical know-how on biocatalytic and enzymatic routes
- Successful case studies on traditional catalytic process being replaced by "green catalyst" to get economical benefit and reduce environmental impact
- Getting connected to potential collaborators and technology providers on 'green catalysts'

#### Green Engineering (16:00 to 17:30)

- Designed to bring forth emerging aspects of "green engineering" for process intensification, water & energy optimization, reduced waste and toxicity, leading to higher safety
- Exploring potential contribution of flow chemistry and microreactors in reducing the overall environmental footprint of chemical manufacturing
- Case-studies on "Green Engineering" technologies incorporated at
  the design stage of materials, processes, systems, and/or devices
  which can minimize the overall environmental footprint of Process
  Industry



# One-day Conference exclusively for State Pollution Control Boards; IGCW-2017, Day I- 5th Oct. 2017

# industrial green chemistry

#### **Objectives of the PCB Conference:**

- To introduce & expand awareness about Green Chemistry & Green Engineering amongst PCBs
- To deepen its technical understanding and various approaches for preventing pollution at source
- To expand their understanding of regulatory initiatives and successful approaches in other parts of the world like USA, UK and Europe
- To provide a conducive platform for sharing their thoughts, ideas and experiences and thereby, learn from each other's initiatives & experiences
- To get connected to Green Chemistry and Green Engineering based environmental solution providers and experts





## Research Institutes - Industry interactions for accelerating Green Chemistry Implementation, IGCW-2017, Day II- 6th Oct. 2017

The research ecosystem in India presents a significant opportunity for Chemical Industry across the globe to benefit from its intellectual capital available in the country.

This unique platform is designed to tap the potential of Research Institutes by facilitating one-to-one interactions between National Research Institutes and Chemical Industry, with the objective to accelerate Research-Industry collaborations in the Green Chemistry direction.

Profit-centric Green Chemistry implementation demands staying ahead in integrating next generation technologies. The Research Institutes with its intellectual capital, and the financial back-up of several partnership schemes promoted by the Govt. of India; serves as the most cost-effective transfer agents of both knowledge and technology. In addition to being the primary developer of cutting edge technologies in Green Chemistry space, the Research Institutes in India are best positioned to facilitate the industry in advancing its technology, products and processes and provide strategic advantages for industries to compete globally.



#### **IGCW 2017 Workshop for Teachers & Students**

Interactive Workshops will be organized for Chemistry Teachers and Students pursuing the field of Green Chemistry and/or Green Engineering, offering timely opportunity to interact with global experts, industry stalwarts and thought-leaders.

These Workshops will be held on 7<sup>th</sup> October in collaboration with leading Academic Institutes.



#### **IGCW 2017 Partnership Opportunity**



#### **Partnership Capacities**

Title	International Partners (USD)	Indian Partners (INR)	Standard Entitlements
Sustainability Partner	20,000	10,00,000	Customized entitlements*, in addition to the standard entitlements mentioned below
IGCW Award Partner	NA	7,50,000	Exclusive branding during IGCW2017 Awards Evening, in addition to the standard entitlements mentioned below
Green Chemistry / Green Engineering Partners	15,000	6,50,000	Affiliation as the 'category' partner in all pre, during and post, print & web promotions
4R-Partners (Recycle, Reduce, Reuse & Recover)	8,000	4,44,400	Branding & visibility benefits will vary based upon the choice of Partnership category
180° Seminar Partner Categories: - Green Processes - Green Solvents - Green Catalysts - Green Engineering	6,500	3,50,000	<ul> <li>2x2 Complimentary stall / Table-space at the IGCW-2015 EXPO (subject to category choice)</li> <li>Complimentary delegate passes (subject to category choice)</li> <li>Extensive media coverage (Local &amp; International, subject to category choice)</li> </ul>
IGCW Cause Partners IGCW Donor Partners	5,000 NA	2,50,000	Access to e-IGCW social media reach-out and non-linear branding
Students & Teachers Workshop	3,500	1,50,000	* Subject to prior agreement.



#### **Branding & Advertising Opportunities:**

Category	Amounts in INR	Amount in USD
Insert in Delegate kit	50,000/-	1500
One company standee in prime location	45,000/-	1000
Colour Advert in IGCW Convention Catalogue (Inside front page)	35,000/-	850
Colour Advert in IGCW Convention Catalogue (Inside back page)	25,000/-	650
One-page Advert	25,000/-	500



#### PAST PARTICIPANTS

#### **MNC & Large Chemical Companies**









































Pidilite



Piramal













































































#### **Small & Medium Chemical Companies**



















**EQUINOX** 



**GEIST** 



Nutraplus



































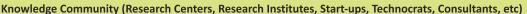
























#### **Academia, Government Institutes & Associations**



Ministry of Environment & Forests (MoEF) Central Pollution Control Board Dept. of Science & Technology



















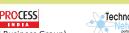
inspiring!

with Indian green chemists.











Warner Babcock Institute of Green Chemistry, USA

**ChemicalWatch** 









World Of Chemicals

#### Speciality Chemicals **Chemical Weekly**

Comments & Feedback

While I was only there for one day, I could tell that it was extremely successful.

Congratulations on putting together a wonderful event. - Dr. John C Warner, Co-Founder 12 Principles of Green Chemistry, CTO -

You all have made a huge commitment to implementing green chemistry and engineering in India and all your hard work and sacrifice is beginning to be rewarded, I think. Thank you for all you have done, and continue to do. It's truly

- Dr. David Constable, Director, ACS-Green Chemistry Institute, USA

Thank you for the excellent conference you hosted and organized in Mumbai, never we had so potential connections to develop. My sincere thanks on behalf of Prof. James Clark, Dr. Matharu, myself and everyone at York who is making new links

> - Dr. Mark Gronnow, Green Chemistry Center for Industry Excellence, York University, UK

It was a good show put up by you and your team. The event was satifying in terms of industry presence and our content of discussions/presentations. Look forward to the next programme. Do share the details when ready.

- Mr. Girish Thorat, General Manager - India,

**ROCHEM Separation Systems, India** IGCW was very good opportunity for us to introduce new products to potential

customers from pharmaceutical and fine chemical industry in India. - Shunji Sakamoto, ZEON Corporation Speciality Chemical Division, Japan

It was indeed fruitful exhibiting at the IGCW Symposium which gave an insight of the Industry working for the Green Environment. We had quite good interactions with few fellow industrialist to see how we can contribute to the same. Thanks for

your support and Congratulation to you and your team for the successful event.

- Mr. Rahul Kirkinde, Business Head- API Healthcare, Advanced Enzymes Technologies Ltd., India







#### industrial green chemistry a new vision for one earth, one future



#### Join us at e-IGCW Social Media

- IndustrialGreenChem.com
- twitter.com/IGCW
- in bit.ly/IGCWonLinkedin
- youtube.com/user/IGCW
- facebook.com/IndustrialGreenChemistry
- plus.google.com/+Industrialgreenchem/posts

#### Organizer:



#### Green Chemis Tree Foundation

C/o. Newreka *Green®Synth™* Technologies Pvt. Ltd. 405, Mastermind IV, Nr. Royal Palms, Aarey Colony, Goregaon (East), Mumbai - 400 065, India.

**Tel.** : +91-22-2879 1275 / 1835

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Email: connect@greenchemistree.co.in
Url: www.greenchemistree.co.in



#### What is Industrial Green Chemistry World?

- India's first & largest Industrial Convention dedicated to GC&E.
- Brings together diverse stakeholders Industry, Govt. Bodies, Regulatory Agencies, Research Institutes, Associations, Academia, Students, Media and NGOs).
- Recognized by global GC&E communities.
- Focusses on GC&E implementation in chemistry-intensive sectors such as Pharma., Agro, Dyes & Pigments, Fine and specialty chemical sectors.

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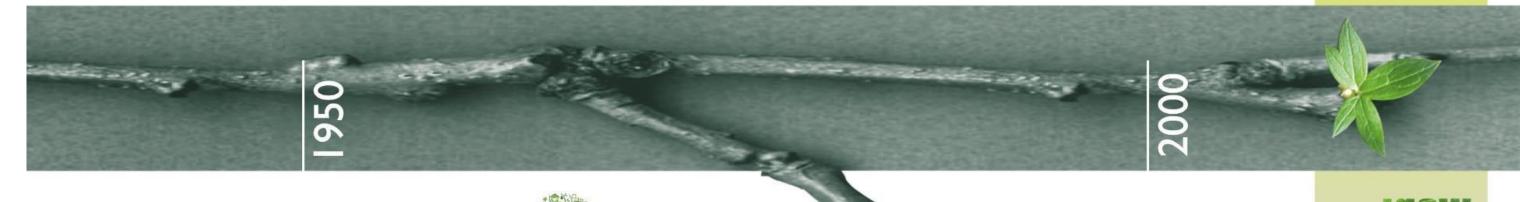
2019

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**GCW** 2011

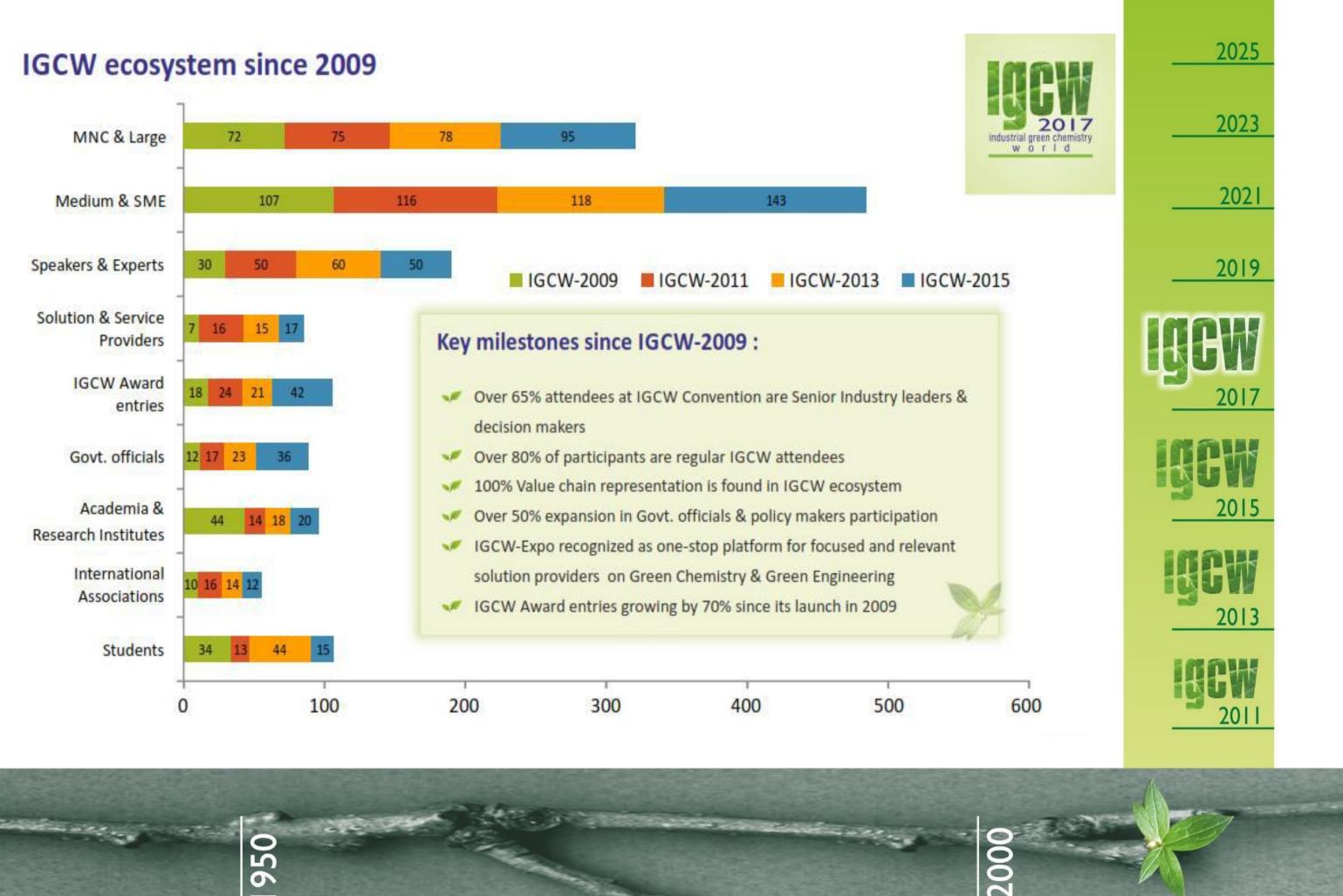


Organizer

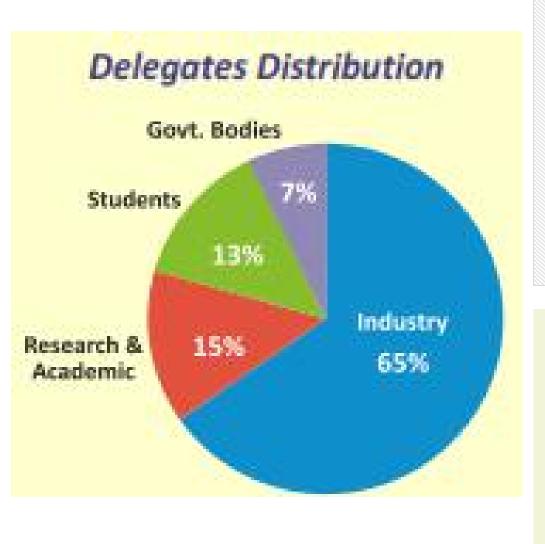


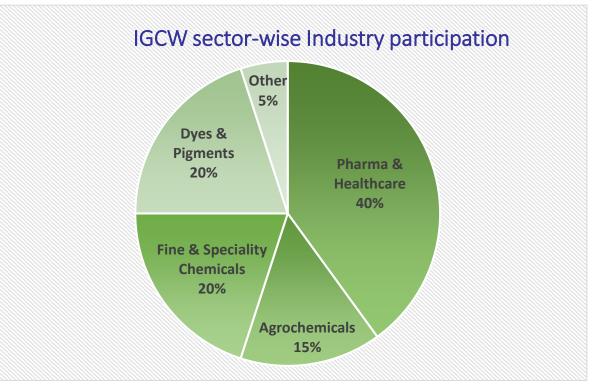


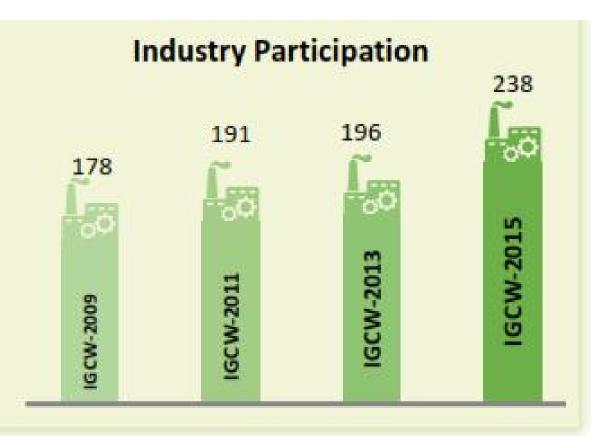
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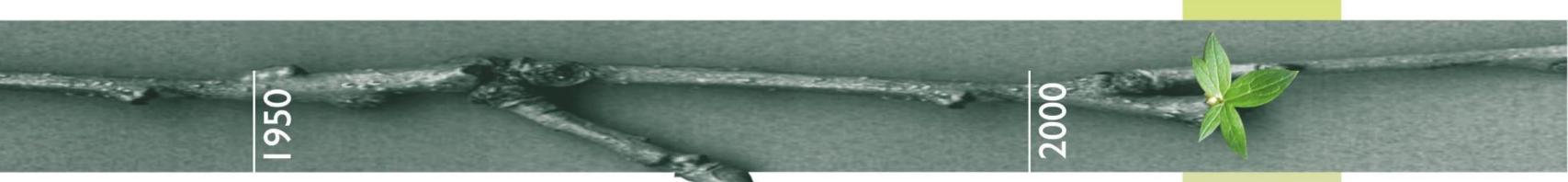








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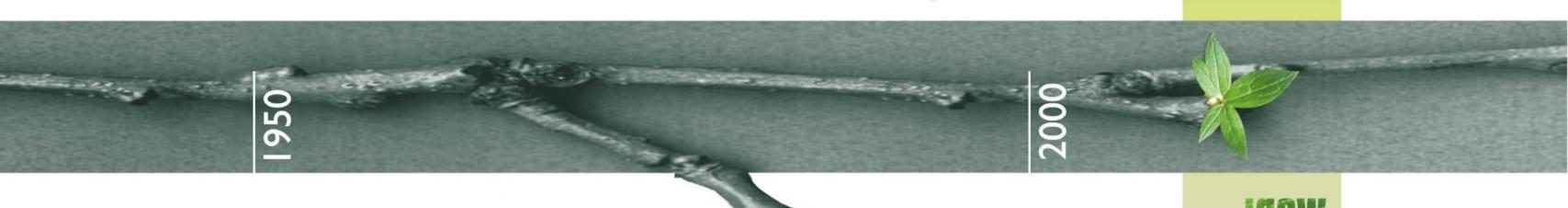




# Two days | 6 dimensions | 40+ global experts over 300 chemical community stakeholders' participation



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# IGCW-2017 Ecosystem Day I, 5<sup>th</sup> Oct. 2017, Thursday

Day I, 5 <sup>th</sup> Oct.'17	Hall	Time-slot	Theme	Participants' profile	Expected no. of Attendees	Status
IGCW-2017 Sympo	Emerald Ballroom First floor	9:00 to 17:30	9-i Themes: Ignition, Inspiration & Initiation	Senior Management and chief decision makers of Chemical Industry (Pharma API, Agro, Dyes & Pigments, Fine & Specialty chemical manufacturing sectors); Senior Govt. representatives. Policy makers / influencers.	150	Confirmed
IGCW-DST Award Evening	Emerald Ballroom First floor	18:30 to 21:30	IGCW-DST Award Felicitation followed by networking dinner	Participants of IGCW Symposium, Invited guests, Senior Govt. officials, distinguished scientists, experts from Academia & Research Institutes	200	Confirmed
IGCW-PCB Conference	Sapphire Ballroom First floor	11:30 to 17:00	Role of State Pollution Control Boards in Green Chemistry implementation for Pollution prevention	Member Secretaries, Chief Environment Engineers, senior representatives of State Pollution Control Boards	40	Confirmed
IGCW-CSIR Industry Interactions	Seminar Hall First floor	11:30 to 17:00	Partnering with CSIR Labs for accelerating Green Chemistry Research & Implementation	CSIR Principal Scientists, Head of Research departments, senior decision makers, R&D chiefs, etc.	50-60	Confirmed
IGCW-Flow Chemistry Conference	Crystal Ballroom I	11:30 to 17:30	Conference on Flow-chemistry	Chief representatives from Production, Operations, Plant & EHS.	80-100	Proposed
IGCW-EXPO	Crystal Ballroom II & III & Pre- function area, Ground floor	Day II: 11:00 to 19:30  Day II: 09:30 to 17:00	Exhibition by ~40 companies, institutes, offering GC&E solutions, technologies, tools, and services	Open to all	+500 Visitors	Confirmed

# IGCW-2017 Ecosystem Day II, 6th Oct. 2017, Friday

Day II, 6 <sup>th</sup> Oct.'17	Hall	Time-slot	Theme	Participants' profile
IGCW-2017 Sympo.	Emerald Ballroom, First floor	09:00 to 13:00	9-i Themes : Identification, Invention & Innovation	Chief representatives from R&D, R&T, Chief of Innovation Centers, Academia, Research scientists, etc.
IGCW-2017 Sympo.	Emerald Ballroom, First floor	13:00 to 17:00	9-i Themes: Implementation, Industrialization & Impact	Chief representatives from Production & Operations, 1 Technocrats, Plant Managers, EHS Managers, etc.
IGCW-EXPO	Crystal Ballroom II & III & Pre- function area, Ground floor	Day II: 11:00 to 19:30  Day II: 09:30 to 17:00	Exhibition by ~40 companies, institutes, offering GC&E solutions, technologies, tools, and services	Open to all +
IGCW-180° Seminars	Sapphire Ballroom First floor	09:00 to 17:00	9:30 to 11:00 : on Green Processes 11:30 to 13:00 : on Green Catalysts 14:00 to 15:30 : on Green Solvents 16:00 to 17:30 : on Green Engineering	Each Seminar expected to be attended by 70-80  Managers, senior representatives from R&D &  Production
IGCW-ACS-GCI Pharmaceutical Roundtable Workshop	Crystal Ballroom I Ground Floor	09:30 to 17:00	Interactive Workshop on using Solvent & Reagent selection guide & GC&E tools	Chief representatives from R&D, R&T, Production,  Operations, Plant & EHS.
IGCW-Workshop on Emerging Tools & Technologies	Seminar Hall First floor	11:30 to 17:00	TBA	Research scientists, Innovation centers, R&D Heads, 4 etc.

### **IGCW-2017 Convention & Ecosystem Layout**

