

INDIAN CRYOGENIC COUNCIL (WEST ZONE)

Theme Meeting on Researchers & Industry Interaction in
Cryogenics

Date: 23rd August 2014

Venue: Hotel Surya Palace, Opp. Parsi Agiyari,
Vadodara, Gujarat – 390 020,

HOSTED BY

INOX INDIA LIMITED

4th Floor, ABS Towers,
Old Padra Road
Vadodara, Gujarat
Pin: 390007

Theme Meeting on Researchers & Industry Interaction in Cryogenics

About the meet

- **Indian Cryogenic Council** (West zone) organized a Theme Meeting on Researchers & Industry interaction in Cryogenics on 23rd August 2014.
- This meet was conducted to provide a unique opportunity to all the participants from the Research sectors and Industrial sectors involved in design to operation as well as providing services, specifically in the field of cryogenic related science and technologies.
- The meet provided a platform to share the wealth of knowledge available in both the sectors for mutual benefit towards large projects in Accelerators and Fusion apart from basic physics.
- The focus was on exposure /exchange of information of research areas/latest developments in the related fields of Cryogenics and low temperature physics.
- This one day meet was hosted by **INOX India Limited**, Vadodara.

Time	SCHEDULE			
9 -10.00 am	Registration			
10 -10.40 am	INAUGURAL SESSION Welcome by Mr.Rajkumar Panjwani, Vice President INOX India Limited. (Convener) Address by Prof. S.L.Bapat, IIT Bombay ,Chairman ICC West Zone Address by ICC President – Dr. R.K.Bhandari Ex Director , VECC -DAE Address by Chief Guest – Dr Shishir Deshpande , Project Director ITER- India			
10.40-11.00 am	Tee Break			
		SPEAKERS	INSTITUTE/INDUSTRY	TOPIC
11.00-11.15 am	1	Prof Milind D. Atrey	IIT Bombay	Cry cooler Technology at IIT Bombay
11.15-11.30 am	2	Mr. Soumen Kar	IUAC New Delhi	Superconducting magnet Technology
11.30-11.45 am	3	Mr. S.S. Udgata	I – Design, Pune	Computational Flow Thermal Analysis on Cryopanel
11.45-12.00am	4	Dr.K.Gireesan	IGCAR Kalpakkam Chennai	Establishment of SQUID based measurements in Biomagnetic fields
12.00-12.15 pm	5	Dr. H B NaiK	NIT Surat	Pulse Type Cryo Coolers and Thermo acoustics
12.15-12.30 pm	6	Mr.P.Srinivasa Rao	SHAR- ISRO Sriharikota	Technology Development activities at SDSC SHAR in the field of Cryogenics.
12.30-12.45 pm	7	Mr. Munjal Mehta	Shell-N-Tube Pvt. Ltd.Pune	Product Development for Space & Nuclear Applications
12.45-1.00 pm	8	Mr. Mukesh Goyal	BARC	Large scale liquid helium/helium refrigeration systems – R&D at CRTD BARC-present and road ahead
1.00-1.15 pm	9	Mr. Krishna Das	Apollo Heat Exchangers Pvt. Ltd, Mumbai	Aluminum brazed plates fin heat exchangers
1.15-1.30 pm	10	Mr. Nayan. Pandya	CRYOgas Industries, Vadodara	"Applications of Cryo Coolers for Indian Market" " Presented by Sumitomo and Cryogas
1.30-2.30 pm	Lunch (Prof R Singh, University of Hyderabad to apprise on 25 th National Symposium on Cryogenics)			

Time				
2.30-4.30 pm	Post Lunch Session			
	SPEAKERS		INSTITUTE/INDUSTRY	TOPIC
2.30-2.50 pm	1	Dr. T.S.Datta	IUAC New Delhi	Cryogenic equipment available at IUAC for commercial production by Indian Industries
2.50-3.10 pm	2	Mr.P.P.Kulkarni	INOX India Limited	Recent Advances in use of LNG in High Power Engines
3.10-3.30 pm	3	Mr.SujithKumar Raghavan Pillai	ISRO- VSSC Trivandrum	Semi- cryo engine development-challenges for the Indian Industry
3.30-3.50 pm	4	Dr.Vipul Tanna	IPR-Gandhinagar	Overview of SST-1 cryogenic system – Recent Developments
3.50-4.10 pm	5	Mr. A. K. Sahu	IPR-Gandhinagar	Indigenous development of kw class helium refrigerator/liquefier at IPR
4.10-4.30 pm	6	Dr. B .Sarkar	ITER- India	Cryogenic System Design for a specific environment – Think(ing) a different domain
4.30-5.00 pm	Tee Break			
5.00-6.00 pm	PANEL DISCUSSION: ALL TO PARTICIPATE Increased interaction amongst Industry- Research – Academia for the growth of Cryogenics in India			Coordinator : Prof M.D.Atrey
	Dr Tirlok Singh, Dr.Bhandari, Mr. Rajkumar Panjwani, Mr. Munjal Mehta, Dr.R .G. Sharma, Dr. T.S Datta			
PANEL	Vote of Thanks - Shri Kishore Talegaonkar , INOX India limited			
8.00-10.00 pm	Dinner – ALL PARTICIPANTS			



Mr. Rajkumar Panjwani,
Vice President ,INOX India Limited.
(Convener)



Dr. Shishir Deshpande ,
Project Director ITER- India
Chief Guest



Dr. R.K.Bhandari
ICC President
Ex- Director , VECC -DAE



Prof. S.L.Bapat
IIT Bombay,
Chairman ICC West Zone

PARTICIPANTS- PROFILE

Service Sector		User Sector
1.	INOX India Limited	SHAR ISRO Sriharikota
2.	Precise Vacuum Engineering	NIT Rourkela
3.	Sterling Cryogenics	NIT Surat
4.	Velan Valves	IUAC New Delhi
5.	Pfeiffer Vacuum	BARC CTD Mumbai
6.	PANalytical	IIT Kharagpur
7.	Shell-N-Tube Pvt Ltd	IPR Gandhinagar
8.	CRYOgas Industries	ITER-India, Gandhinagar
9.	L & T Hazira	University of Hyderabad
10.	Apollo Heat Exchangers Pvt. ltd	VSSC-ISRO, Trivandrum
11.	I- Design	TIFR Mumbai
12.	Crypump Asia	IIT Bombay

INVITED GUEST LECTURES



Prof Milind D. Atrey
(IIT Bombay)

Cryocooler Technology
Development at IIT
Bombay



Mr. Soumen Kar
(IUAC New Delhi)

(Indigenous Development
of Cryogen-Free
Superconducting Magnet
System)



Mr. S.S. Udgate
I – Design, Pune

(Computational Flow
Thermal Analysis on
Cryopanel)

INVITED GUEST LECTURES



Dr.K.Giresan
(IGCAR Kalpakkam
Chennai)

(Establishment of SQUID
based measurements in
Biomagnetic fields)



Dr. H B NaiK
(NIT Surat)

(GM Type Pulse Tube Cooler
& Thermoacoustic
Compressor)



Mr.P.Srinivasa Rao
(SHAR- ISRO
Sriharikota)

(Technology Developmental
activities at SDSC SHAR in
the field of Cryogenics)

INVITED GUEST LECTURES



Mr. Munjal Mehta
(Shell-N-Tube Pvt.
Ltd.Pune)

(Product Development for
Knowledge & Technology
sector)



Mr. Mukesh Goyal
(BARC)

(Large Scale Cryogenic Systems
Liquid He/He Refrigeration R&D
at CrTD, BARC
Present & Road Ahead)



Mr Krishna Das
(Apollo Heat Exchangers
Pvt. Ltd, Mumbai)

(Aluminum brazed plate fin
heat exchangers)

INVITED GUEST LECTURES



Mr. Nayan. Pandya
(CRYOgas Industries,
Vadodara)

(Applications of Cryo
Coolers for Indian Market
" Presented by Sumitomo
and Cryogas)



Dr. T.S.Datta
(IUAC New Delhi)

(Cryogenic equipment
available at IUAC for
commercial production by
Indian Industries)



Mr.P.P.Kulkarni
(INOX India Limited)

(Recent Advances in use of
LNG in High Power Engines)

INVITED GUEST LECTURES



Mr. Sujith Kumar
Raghavan Pillai
(ISRO- VSSC
Trivandrum)

(Semi- cryo engine
development-challenges
for the Indian
Industry)



Dr. Vipul Tanna
(IPR-Gandhinagar)

(SST-1 Cryogenics
Overview
with New
Developments & Up-
gradation plans in
SST-1)



Mr. A. K. Sahu
(IPR-Gandhinagar)

(Indigenous
development of kw
class helium
refrigerator/liquefier
at IPR)



Dr. B. Sarkar
(ITER- India)

(Cryogenic System
Design for a specific
environment –
Think(ing) a different
domain)

PANEL DISCUSSION



PANEL DISCUSSION



Sponsors to the Event

INOX India Limited, Vadodara
SHELL-N-TUBE PVT LTD, Pune
CRYOgas Industries, Vadodara



**Kishore Talegaonkar , INOX India Limited
Coordinator**

Conclusions

- The meet was a great success with lot of exchange of ideas between the participants. It ended with a positive note with need of overall cooperation & innovation.
- In line with changing times ICC to act as catalyst for building competencies / capabilities & capacities in India. Mechanism will be worked out to bridge gaps between Researchers- Industry- Academia. A step was taken by launching a interactive website <https://www.indian-cryogenics.com>
- A path forward was set to have more such meetings and to take up specific issues with concerned authorities.