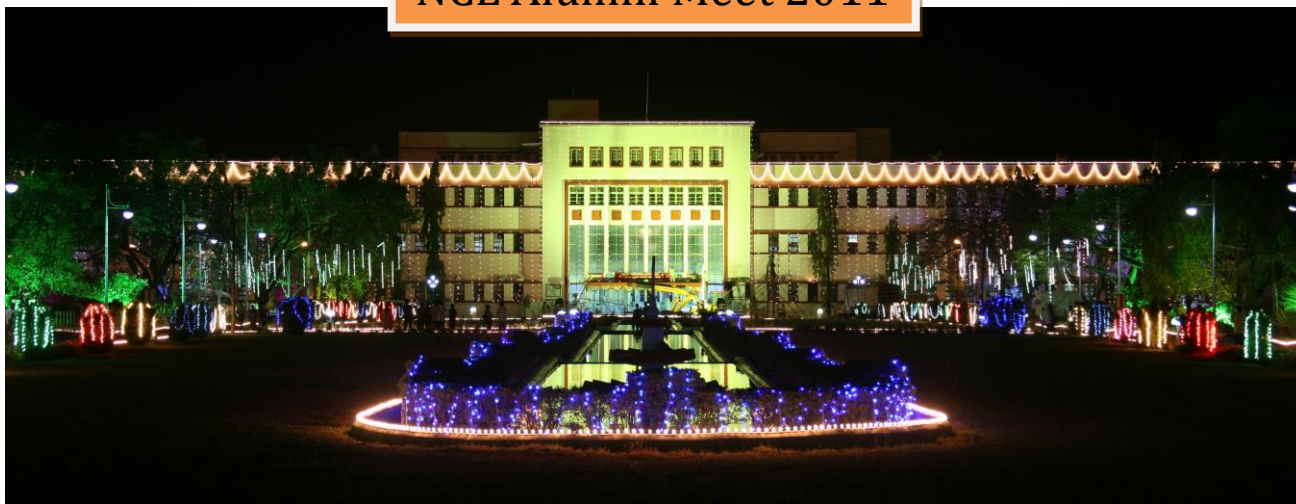


NCL Alumni Meet 2011

A decorative graphic for the NCL Alumni Meet 2011 poster. It features a central yellow oval with a green and orange border. On the left, there is a vertical column with a blue circular logo at the top containing the NCL CSIR logo and a gear icon. Below the logo are several small images of laboratory equipment. The central oval contains text and a circular inset image of the NCL building at night. At the bottom, a dark red banner contains the event title and location.

Even if golden days of Ex-NCLites have really gone
But Footprints in our heart cannot be withdrawn

Problems in chemistry challenged our mind
Kites of discoveries flew problems unwind

NCL taught us many other things in life
How to cut difficulties with intellectual knife

Ladder of unity by NCLites will be raised higher and higher
Making NCL's name in globe brighter and brighter

NCL ALUMNI MEET 2011
● PUNE ●

Organized by

CSIR – NCL and Ex-NCLites
December 24-25, 2011

CSIR – NCL, Pune

NCL ALUMNI MEET 2011

Jointly Organized by

National Chemical Laboratory

and

Ex-NCLites

December 24 – 25, 2011-12-22

Venue: NCL Auditorium

SOUVENIR

Saturday, December 24, 2011	
9:00 to 9:30 AM	Registration and Tea
	A warm welcome
9.30 to 10.00 AM	Welcome Address by Director, NCL
10.00 to 11.00 AM	Address by Dr Sivaram and Dr BD Kulkarni
11.00 to 11.15 AM	Vote of Thanks
11.15 to 11.30 AM	<i>Tea Break</i>
11.30 to 11.45 PM	Remarks by Prof. M.S. Wadia
11.45 to 12.30 PM	Technical presentation by Prof. K. N. Ganesh <i>Title: Some Random Thoughts; On becoming a successful Researcher</i>
12.30 to 14:00 PM	Lunch at old canteen
14.00 to 14.30 PM	Photo Session
14:30 to 15.15 PM	Technical presentation by Dr. Datta E. Ponde <i>Title: Role of Biomedical Imaging on Modern Drug Discovery</i>
15:15 to 15.30 PM	Tea Brea
15:30 to 16:00 PM	Technical presentation by Dr. Sandeepak Pandit <i>Title: Enterpre</i>
16:00 to 17:30 PM	Planning discussion for future event
19:00 PM onwards	Dinner with families at NCL Guest House
Sunday, December 25, 2011	
9:00 to 9:30 AM	Registration and Tea
	A warm welcome
9.30 to 10:00 AM	Welcome Address by Director, NCL
10.00 to 11:30 AM	Felicitation of few Alumni Members
11.30 to 11:45 AM	Tea Break
11.45 to 12:45 AM	Memories by Alumni Members
12.45 to 14:00 PM	Lunch at old canteen
14:00 to 14:30	Photo session
14.30 to 15:30 PM	Cultural Program (Victor Academy of Dance)
15:30 to 15:45 PM	Tea Break
15:45 to 17.30	Cultural Program (Videocon Academy of Performing Arts)
5.00 to 6.30 PM	High Tea & Disperse

Message



I am extremely happy to know that the past Ph. D. students of NCL are organizing first CSIR-NCL Global Alumni Meet “Ex-NCLites Meet” at CSIR-NCL, Pune during December 24-25, 2011.

The research scholars have always been our strength over the years. A large number of them have been working in various organizations all over the world in academia/research/corporate sectors. Some of the alumni are successful entrepreneurs, contributing immensely to the growth of India and other countries. Ex-NCLites are successfully practicing, the knowledge and values that they acquired during their period at CSIR-NCL and CSIR-NCL is proud of them.

I am sure, this Ex-NCLites Meet will be an annual meet starting this year and give an opportunity to develop an active alumni-institute network that will foster alumni-institute-industry interactions in India and abroad. CSIR-NCL will always offer its fullest support for such endeavors. I believe that such alumni meetings will showcase the value and strengths of our laboratory and a regular global alumni meeting will be the focal point of interactions of alumni in future.

I wish a great success for this event and many more events like this in the years to come.

Sourav Pal
Director
National Chemical Laboratory, Pune



Dr A V Rama Rao
Founder, Chairman and Managing Director
AVRA Laboratories Pvt Ltd.
Avra House, 7-102/54, Sai Enclave,
Habsiguda, Hyderabad- 500 007, India
Phone: +91-040- 27178571
Fax: 27179149, 27175605
Website: www.avralab.com
E-mail: ravi@avralab.com

I was thrilled to know that you have taken the initiative to revive NCL Alumni Association and requested me to join you all on 24th December 2011. Due to several reasons, I regret my inability to attend the same.

NCL always remained as a great institute of learning and all the earlier Directors have created an excellent atmosphere and nurtured the young talented research fellows who joined to carry out their Ph.D. Degree in Chemical Sciences. Many of them have turned out to be scientists of international repute and several became entrepreneurs who made mark worldwide. They include such names as Govardhan Mehta, Anji Reddy, Jyothi Chattopadyaya, B.D. Kulkarni, R.V. Chaudhari, V.R. Choudhary and many more. Several are presently holding very senior positions in Academic and Industry, with in India and abroad.

Presently I am indebted to NCL and the three Directors with whom I was closely associated, Prof. K. Venkataraman, Prof. B.D. Tilak and Dr. L.K. Doraiswamy. They were all my true mentors and gave me freedom and encouraged me to do what I felt was the best in the national interest. I nurtured several research fellows who are now leaders in their own right and holding senior positions in scientific and industrial organizations. I owe my success to this great organization.

I am happy that NCL Alumni Association is having revived and should organize yearly once an event, preferably on NCL Foundation Day, to gather and share your experiences and also interact with NCL scientists in shaping this grate organization in its future research programs.

Further, it will be a nice idea to institute an annual award as “NCL Diamonds” and recognize them annually who brought laurels to NCL.

I am confident that the present and the past two Directors, presently at NCL will give all out support in your endeavor.

With best wishes to the Alumni,

Dr. A V Rama Rao
Founder, Chairman and Managing Director
AVRA Laboratories



डॉ. एस. शिवराम

सी.एस.आय.आर. भटनागर फेलो

Dr. S. Sivaram

CSIR Bhatnagar Fellow

ए 201, बहुलक एवं प्रगत पदार्थ प्रयोगशाला

राष्ट्रीय रासायनिक प्रयोगशाला

डॉ. होमी भाभा मार्ग, पुणे - 411 008. भारत

A 201, Polymers And Advanced Materials Laboratory

NATIONAL CHEMICAL LABORATORY

Dr. Homi Bhabha Road, Pune - 411 008. India.



December 21, 2011.

Message

It is indeed very heartening that a group of former NCL students are getting together to organize the first ever get together of Ex-NCLites, at NCL, Pune on 24 and 25 December 2011.

It was almost two years ago that this idea was mooted, when I was the Director of NCL. I enthusiastically supported the idea and assured all support. I am very happy that my successor, Dr. S. Pal, has also supported this initiative with the same enthusiasm and this event is now a reality.

NCL has a rich community of alumni (Ph.D. students, postdoctoral fellows, former scientists and project assistants) who have experienced the excitement, exhilaration as well as the pain of doing science, but who have gone on to excel professionally in all walks of life.

NCL alumni are found everywhere in the world in industry, academia and Government, living the values that NCL taught them – integrity, commitment, hard work and a sense of service to the community in which they serve. NCL, is proud of all of them, as they are our best ambassadors, who by their life and work make this institution proud.

Unfortunately, NCL does not have a complete database of our alumni nor do we reach out to them in the manner we need to. With their diversity, global reach and goodwill, our alumni can be a rich resource for NCL. When I took over as the Director, creation of an office of Alumni Affairs was one of my agenda. However, I must admit, I failed to accomplish this. I do hope that such an office, who keep our alumni informed of NCL, through various modes of communication, print, electronic, web and also connect our alumni world wide will become a reality.

I wish they get together all success and hope that this becomes a regular event at NCL.

S. Sivaram

FELICITATIONS



KIKKERI J. DIVAKAR PhD

EDUCATION:

Masters in Chemistry: 1970-72, University of Mysore, Mysore, India

Ph.D in Synthetic Organic Chemistry: 1973-1977, National Chemical Laboratory, Pune, India under the guidance of Dr. A. Somasekar Rao

Post Doctoral Research : 1978-81, King's College University of London, UK, in the research group of Prof. Colin B. Reese, FRS in Nucleic Acid Chemistry

WORK EXPERIENCE:

Nearly 30 years of research and development experience in leadership roles

Pharmaceutical Discovery: 1982-1988, Hindustan Ciba Geigy Research Centre, Mumbai, India

Pharmaceutical Process R&D: 1988-1994, Hindustan Ciba Geigy, Mumbai

Specialty Chemicals Research: 1994-1998, Ciba Specialty Chemicals Ltd, Mumbai

Contract Research (Pharma / Specialty Chemicals): 1998-2003 Innovassynth Technologies, India

Crop Protection Process R&D: 2003-2005, Indofil Chemicals Ltd, Mumbai

Crop Protection Research: 2005- present, Syngenta Biosciences Pvt Ltd, Goa

LEADERSHIP POSITIONS:

Group Leader to Deputy Manager, Pharma Discovery and Process R&D: Hindustan Ciba Geigy Ltd, 1982 - 1997

Senior Manager R&D – Specialty Chemicals, Ciba Specialty Chemicals, India 1997-98

Vice President R&D: Innovassynth Technologies (Formerly Indian Organic Chemicals), 1998-2002

Vice President R&D: Indofil Chemicals Ltd (Now Indofil Industries Ltd), Mumbai 2003-2005

Director, Research & Technology at The Syngenta Research and Technology Centre, Goa, India in Crop Protection Research 2005 - Present

AREAS OF RESEARCH INTEREST AND EXPERTISE:

Underlying Science: Synthetic Organic Chemistry

Research Areas: New Drug Discovery, Process Research and Development, Specialty Chemicals, Discovery and Development of new Crop Protection Agents

Leadership Responsibilities: Leading R&D Teams from 3 (1982) upto 25 (1998); Heading R&D Units since 1998. Currently heading a state of the art R&D site with 110 FTEs (all M.Sc or PhD)

Member, Board of Directors of current legal entity

Member, Global Research Leadership Team in Crop Protection R&D

ACADEMIC:

Member Board of Studies in Industrial Chemistry, Mangalore University

Visiting Faculty, Institute of Chemical Technology, Mumbai (2002-3) and Mangalore University (Present)

- **20 Peer reviewed publications**
- **5 patents**
- **Member, American Chemical Society**

syngenta



With Best Compliments
Syngenta Research and Technology Centre, Goa



M/s PACT Labs Pvt Ltd.

Dr Milind Sathe, Owner

Plot No 27-29, MIDC, Lote Parshuram, Ratnagiri

Education: *Ph.D.:* University of Poona, Pune, India, October 1993

Thesis Title: Metal-Carbene Complexes of Chromium (under the supervision of Dr A. Sarkar)

After completing M.Sc. at the Dept of Chemistry, University of Pune, Dr Sathe worked for Hoechst R&D, Mulund for 2 years (1986-1988). In 1988, he joined for PhD in NCL and received the Ph.D. degree in 1993.

After completing PhD, Dr Sathe joined a company named MASS Dyechem and became a shareholding director in 1997. Until 2009 Dr Sathe continued with Mass Dyechem. In 2007, started a procedure to start his company, PACT, which became operational in 2010. PACT employees 15 people and is a manufacturer of pharma intermediate.

PACT is in the process of implementing quality system under the norms of GMP.



WHO WE ARE

Spectra Specialties was established in 1994 at Pune by Dr. N. S. Dabke.

Started with a team of just five highly motivated people, today homes forty-five dedicated members.

Activity started with Manufacture of additives for Pharma Industry and now caters Textile, Paper, Paints & Coating, Pigments, Metal Treatments, and Biotech industries.

Spectra has a multifunctional plant to suit the chemistries, which include unique synthesis, sulfations, phosphations, condensations, esterification, polymerization, quaternisation, hydrolysis.

The strong R&D and technology development group team is well equipped with advanced laboratories and pilot plants to carry extensive innovative studies in diverse application areas.

We are committed to meet exceeding customer requirements of good quality, consistency and stress on continual improvement that builds sustainable value and profitable growth to our customers, suppliers and business associates.

Ecological, environmental and social responsibilities are given utmost importance in manufacturing all products.

Milestones

- 1994 Manufacturing Activity starts with Pharma specialties
- 1998 Phosphate Esters' Manufacture for Textile Business
- 1999 Products for Biotech Industry
- 2000 First Export Orders to Europe and USA
- 2001 Package for Soft flow Processing in Textile Industry
- 2002 Manufacturing capacity doubled to 200 tones / month
- 2003 Preparation/Dyeing Package for textile Industry Launched
- 2004 Tie Up with Manchester, UK's firm for Marketing of Textile Auxiliaries
- 2005 Introduction of APEO; VOC and solvent free emulsifiers for polymerization
- 2006. Package for CBR
- 2008 Products for Paper Industry
- 2009 Obtained ISO 9001:2008 Certificate ; Capacity enhanced to 350 tones/month
- 2010 Production capacity increased to 450 tones/month
- 2011 Obtained additional site for expansion



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A-12, Lunawat Complex,
Opp. Kothrud Bus Stand,
Kothrud, Pune - 411 029 (India)

Phone : +91 (020) 25422337
25447419, 25434530
Fax : +91 (020) 25464963
E-mail : spectraproducts@vsnl.com

Factory:
Plot No. 3 & 4, Gat No. 267/1/1,
Pirangut, Tal. Mulshi, Dist. Pune.



SAMBASIVAM GANESH

Anthem Biosciences Pvt. Ltd.
49, Canara Bank Road
Bommasandra Industrial area, Phase-I
Hosur Road, Bangalore -560 099
Tel: +91 80 6672 4101
Fax: +91 80 6672 4020
Cell: +91 9243555502

Education

Ph.D.: University of Poona, Pune, India, October 1993
Thesis Title: Studies in Stereoselective Transformation on Arene-Chromium Template

Employment

Anthem Biosciences
Co-Founder and CSO, August 2006

Syngene International Pvt. Ltd., Bangalore, India.

- *V.P. and CSO: April 2000 to August 2006.*
- *Scientific Manager and Head, Synthetic Organic Chemistry: April 1998 to March 2000*
- *Associate Scientific Manager: May 1994 to March 1998*

Joined the company since its inception. Responsible for setting up the chemistry labs and the research teams. Developed a team of 500 chemists in a span of 12 years, with skill sets in diverse areas in chemistry.

Affiliation

Member, American Chemical Society

After completing the Undergraduate course in Chemistry at Madras University in 1986, won a Fellowship from National Chemical Laboratory (NCL) in Poona, for securing a rank in the top 20 at the All-India level. On completing the Master's program in Organic Chemistry at the University of Poona, won a Fellowship in 1988 from the University Grants Commission, Government of India, for the Ph.D. program in the field of Chemistry at NCL.

The Ph.D. degree in Chemistry was awarded in 1993. After completing a short stint of post doctoral work at NCL, joined Syngene (Biocon Group Company) in 1994 on its inception. Rose to be VP and CSO in a span of 12 years and built a good cohesive group of 500 chemists with diverse chemistry skills.

In August 2006, decided to Co-Found Anthem Biosciences, along with two ex-colleagues.

Anthem Biosciences is a Discovery Research and Alliance Partner. It is located in Bangalore, India



Aarushi Specialty Chemicals Pvt. Ltd.

Established in the year 2006, Aarushi Specialty Chemicals Private Limited is a renowned manufacturer and supplier of water based lamination adhesives, polyester resins & polyurethane adhesives, paint emulsions, textile emulsions and leather auxiliaries.

Aarushi is exclusive agent for supply of waterborne PU of M/s Alberdingk Boley GmbH, Krefeld, Germany

Aarushi is a ISO 9001-2008 company & is closely associated with one of the world's biggest chemical manufacturing company.

In 2011 Aarushi has won "Indian Achievers award for Emerging company 2011", "International Achievers Award for Emerging company 2011" & Certificate of appreciation from International Labor Organization.

Contact Address :

191/192, Village Kelawade, Off Mumbai-Bangalore Highway, Pune

+91-9096084711

www.aarushi-chemicals.com

Our Businesses

Polyurethane
Adhesives &
Hardeners

Resins for Paints

Leather Auxiliaries

Waterborne PU for
wood coating

Detergent Additives



M/s Spectra Specialities

Dr N.S. Dabke, Owner

Plot No 3&4,267/1/1, Pirangut, Pune District

After completing B.Sc. Tech in 1982 from ICT (formerly UDCT), Mumbai, Dr Dabke joined NCL with Dr. Doraiswamy's group and received the Ph.D. degree in 1987.

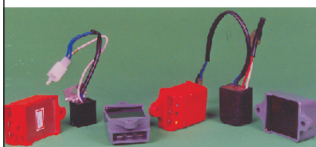
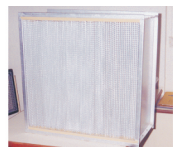
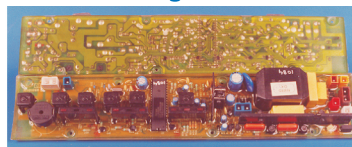
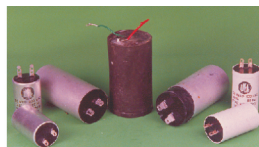
During the Ph.D. program, published 6 papers in reputed international journals and have a co-authored a chapter in a book. After completing Ph.D., Dr Dabke joined NCL as a scientist in the Process Development division at NCL and worked with NCL on various projects until 1993. In 1993 started a manufacturing unit, Spectra Specialities, which is engaged in manufacturing performance chemicals for a variety of industries.

Today Spectra is an ISO 9000 company and is a respectable brand.



Innovations With Polyurethanes & Epoxies Tailor made Polyurethane & Epoxy Systems

*Use of molecular engineering to design polymers to suit performance
Continuous improvement in product quality through innovations
Broad Product Range*



Manufacturers of :

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- Soft Potting System for Auto Electronic Components, CDI, Flasher, Coils
- Developed Import Substitute Products for Washing Machine PCB Potting
- Introduced PU Potting Systems for Capacitors in Indian market
- Adhesives for Air filters, HEPA filters
- Tailor made Speciality Coatings
- Eco-friendly low VOC water borne PU Coatings
- Epoxy Floor Coatings Systems
- Decorative Floor Coatings Systems



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Dr Sandeepak Balkrishna Pandit

M/s Aarushi Specialty Chemicals Pvt. Ltd

Gut No. 191/192, Village Kelawade

Off Mumbai- Bangalore Highway

Tal Bhor, District Pune

Tel: +91-20 25431381

Cell : +91-9096084711

Education: Ph.D., University of Pune, Pune, India, June 1993

Title of Thesis: Structure-Property Relationship in Interpenetrating Polymer Networks & Toughening Agents for Unsaturated Polyesters

Employment:

M/s Aarushi Specialty Chemicals Pvt. Ltd (March 2006), Co-founder & CEO

M/s Clariant India Ltd, (Jan 2004 – Oct 2005) VP & Head of Business – FUN Division

- Joined company (M/s Colour chem Ltd.) as junior officer
- Instrumental in starting of several businesses in the company including polyurethane adhesives of packaging, textile auxiliaries, leather finishing agents, detergent additives.
- Selected many technologies available with Hoechst affiliates/parent organization and introduced them in India

Brief activities:

After completion of two graduation courses simultaneously (B.Sc in chemistry & Diploma in Surface Coating Technology) in 3 years, he joined M/s Garware Paints and M/s Asian Paints for training in resin & paint production. Completed M. Sc. in Organic chemistry from Garware college, Pune in 1984. Started working in NCL as CSIR fellow for Ph. D. program under guidance of Dr. Vikas Nadkarni. Simultaneously, worked on “Development of Jaipur Foot”.

Worked for short time in NCL as Scientist B & joined M/s Colour chem as Junior officer. During 12 years in the said company, worked on many national and international assignments & in many businesses such as packaging, textile, leather, paper, paint additives, detergents, mining, lubricants, metal working agents etc. before resigning as Business head of FUN Division in 2005.

Started 5000 TPA plant for production of resins and specialty chemicals under the name of M/s Aarushi Specialty Chemicals Pvt. Ltd. It is located about 30 km from Pune.



Register No: E-962/Ahmednagar

Deccan Chemical Society's

Deccan Institute of Chemical Technology

Shriram Towers, Opposite Jogging Park, Professor Colony, Savedi, Ahmednagar 414003

Ph.0241-2426512, 8805334100/7387900700

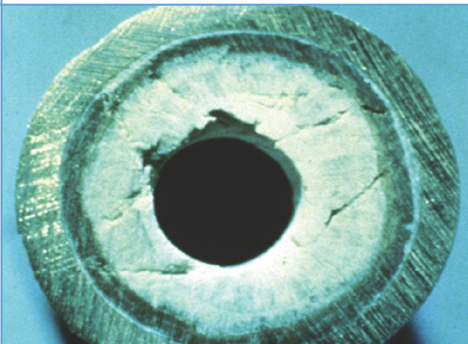
E-mail: contact.dict@gmail.com Website: www.dict-india.org




Dr. Datta E. Ponde who is Director of Deccan Institute of Chemical Technology (DICT) completed his Ph. D in synthetic organic chemistry from University of Pune in Aug 1998. For his Ph. D thesis, he worked at National Chemical Laboratory, Pune under the guidance of Dr. V. H. Deshpande. Dr. Ponde spent 2 years as post-doctoral fellow at The Hebrew University of Jerusalem, Israel working on medicinal chemistry. Being armed with knowledge of organic and medicinal chemistry, Dr. Ponde then continued his teaching and research as Research Associate at famous Washington University in St. Louis, USA in the area of radiochemistry for 4 years. Dr. Ponde is then selected as Assistant Professor at prestigious University of Pennsylvania, Philadelphia, USA. Dr. Ponde worked there for last 6 years before accepting position as Director of Deccan Institute of Chemical Technology (DICT).

Dr. Ponde has published more than 50 international papers, abstracts. Total citation of Dr. Ponde's paper is more than 600. Dr. Ponde attended 13 international conferences. He has vast experience from chemistry to pharmacy and physics to biology. Dr. Ponde has received numerous awards including Pilot Research Award from Society of Nuclear Medicine, USA, Seed award from Abramson Cancer Center and New Investigator Award from US Department of Defense. He was also appointed as Prof. B. D. Tilak visiting fellow by University of Mumbai.

At Deccan Institute of Chemical Technology (DICT), Dr. Ponde developed first of its kind Post Graduate Diploma on Advanced Chemical and Biochemical Separation.



 **NALCO**
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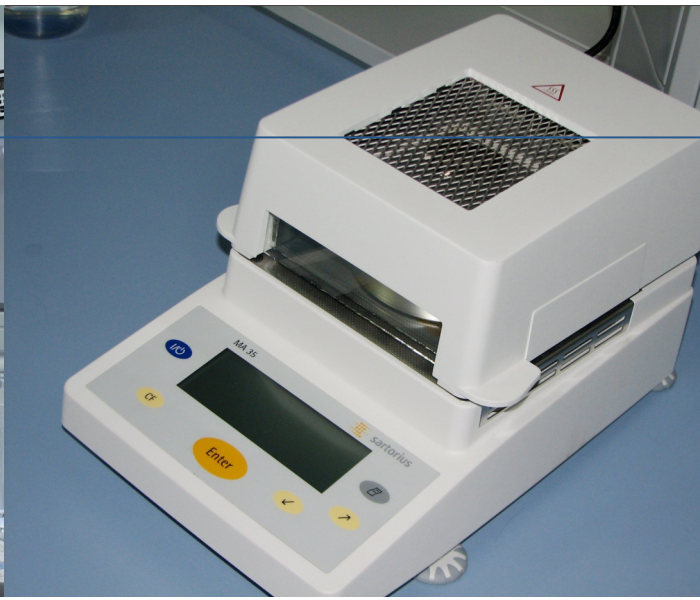
Water & Process Solutions Laboratory

 **NALCO**
Essential Expertise
for Water, Energy and Air

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NLC Nalco India Limited
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Research Focus and Mission

The Water and Process Solutions (WPS) laboratory in Pune R&D primarily provides expertise in water and process applications that combine environmental benefits with economic gains for our customers, typically, water and energy savings, minimize maintenance and capital expenditure, and ensure smooth operation of the plant. In line with this mission, Pune R&D has setup laboratories in the following areas: Raw and Wastewater treatment, Boiler Water, Cooling Water, Membrane operations, and Analytical services.

Raw & Waste Water Laboratory

Raw and waste water contain a complex mixture of solids and dissolved substances, which need to be treated to meet industrial process needs, for discharge, recycle, and reuse. Due to the diversity of wastewater characteristics, the chemical program must be designed specifically for the type of water being treated, as well as, the existing treatment plant. The wastewater treatment research capabilities at the Nalco Technology Center, Pune are established to both support Nalco's existing programs as well as, to develop new chemistries that can meet emerging industrial needs.



Programmable Jar Tester

The Programmable Jar Tester is used to simulate a customer's wastewater treatment plant condition with the site specific water chemistry thereby evaluating and recommending Nalco's coagulants and flocculants.

Pilot Scale Bio-Reactor

Biological treatment of wastewater is a key unit operation in an industrial water treatment scheme. In Nalco's Pune lab, there is a pilot scale bioreactor which will help in studying the bio-degradability of various organic wastes and therefore recommend suitable treatment conditions for the bioaugmentation program.



Dewatering

Dewatering is an integral part of water treatment plant and the Free Drainage Test-Kit and electronic moisture analyzer in the Pune lab is capable of simulating this process which in turn can evaluate the sludge thickening performance of treatment chemicals.

Boiler Water Laboratory

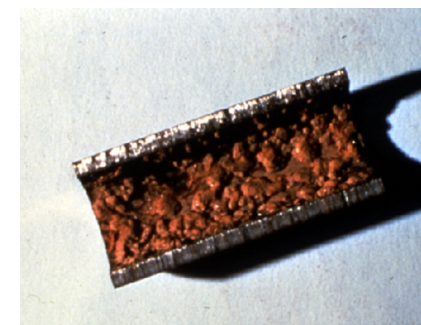
Boiler water treatment is an essential part of any industry primarily to ensure safe, smooth, and reliable supply of steam for process and power generation, increase boiler efficiency and output, and to reduce risk and total cost of operation. Pune R&D has got capability to address boiler challenges through chemical solutions, optimizing operational processes and modifying mechanical components.

Cooling Water Laboratory

Cooling water systems are an integral part of an industrial process operation, with the possibility of productivity and product quality being adversely affected by scale, corrosion, fouling and microbiological contamination. To overcome these challenges, it is essential to select suitable treatment chemical, and continuously monitor their dosage and efficacy on system performance.

Pilot Cooling Tower (PCT) with 3D TRASAR® Skids

Nalco Technology Center, Pune is equipped with two Pilot Cooling Towers (PCT) which can be used to simulate a customer's cooling tower operation with appropriate water chemistry, and then study scaling, fouling, and corrosion potential. Based on the simulation studies conducted at both bench scale as well using PCTs, Nalco can recommend a suitable cooling water treatment program to its customers. The PCTs are equipped with Nalco's flagship 3D TRASAR® technology which



utilizes unique real-time monitoring, patented actives based control technology, proprietary stress resistant chemistry and 24/7 information management capabilities to detect, determine and deliver improved scale, corrosion and microbiological performance in cooling systems. In addition, the PCTs will also be utilized for new product development.

Corrosion inhibitor development and screening

The cooling water lab has a Rotating Disc electrode with Gamry capability which can be used to study corrosion potential and screen corrosion inhibitors for specific water chemistry.

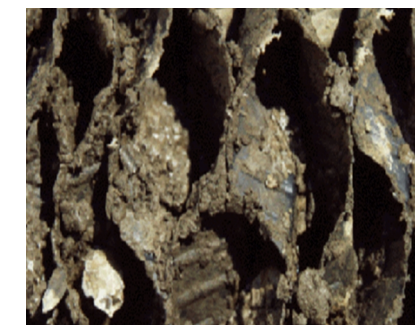
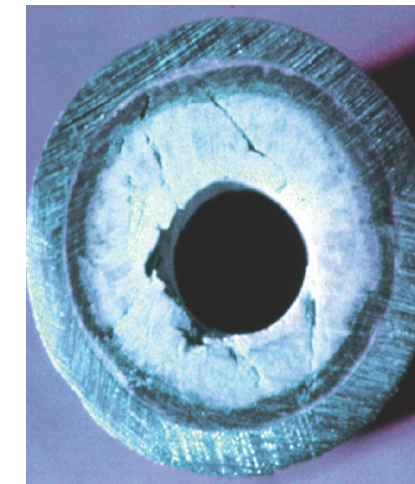


Membrane Laboratory

Membrane laboratory at the Nalco Technology Center, Pune is dedicated to Nalco's customers in support of MF (micro-filtration), UF (ultra-filtration), NF (nano-filtration) and RO (reverse osmosis) membrane operations.

Membrane Selection and Chemical Compatibility Studies

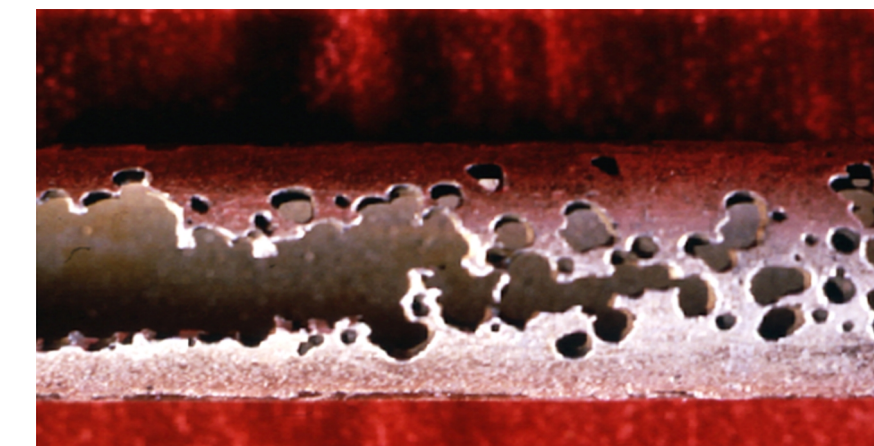
A stirred test cell and cross flow test assembly in the lab will help perform bench scale studies to identify a suitable membrane for a specific treatment process, evaluate chemical compatibility,



and to develop cleaning protocol for the membrane. In addition, the lab is also equipped with a reverse osmosis and an ultra-filtration pilot unit that will help in running pilot scale tests with specific water chemistry and evaluate performance of chemicals against scaling and fouling.

Membrane Autopsy Service

One other key specialized offering in the membrane lab will be the autopsy service which is a standard procedure for assessing loss of membrane performance. In the autopsy process, membranes are cut open and their surfaces are scientifically examined by physical, chemical, and microbiological analyses. This along with the cleaning study determines the type of foulant present which will help in recommending suitable treatment program and cleaning frequency to the customer.



Automation

Automation is a key part of Nalco's water treatment offerings. One of the key components of our automation platform is fluorescence based control technologies. This is already used extensively in our flagship 3D TRASAR® for cooling and boiler water treatment. Pune R&D is a part of the global automation group that is working on expanding this offering to other areas. The lab is equipped with instruments both to support existing fluorescence based technology as well as for expansion projects.

Customer Analytical Laboratory

The customer analytical laboratory will support both Nalco customers as well as internal research group by analyzing water and deposit samples with the following instruments. Currently the lab has an ICP to determine the cation in water sample and a Fluoromax to measure the background



fluorescence for any TRASAR based application. In addition, the lab is also equipped with instruments such as Turbidity meter, Colorimeter, conductivity meter, spectrophotometer, COD analyzer, automatic titrator with intelligent dosing system that are essential to measure the efficacy of chemical treatment program.



SABIC Technology Center

A culture of innovation



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- State of the art laboratories & safety systems
- Stimulating atmosphere
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Anthem Biosciences Pvt Ltd

CONTRACT INNOVATION SERVICE PROVIDER

Anthem Biosciences is a Bangalore based Contract Innovation Service Provider, (A CRO to outsource research activities) located in an industrial park in Bangalore with a built-up capacity to house >300 researchers. Currently, the company employs over 250 people with plenty of room left for adding extra capacity.

The people at Anthem Biosciences bring years of relevant experience to the company. A team of experienced Chemists, Biologists, Engineers and Business professionals own the responsibility of transparent and ethical relationship with customers.

As a CIS - we offer a whole gamut of services dedicated to enable and sustain global research efforts in the discovery of new compounds by pharmaceutical, biotechnology, specialty chemicals, agrochemicals and material science companies - by leveraging our core competencies in organic synthesis, process development, analytical chemistry, discovery biology and regulatory affairs.

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to engineer stable cell lines,
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