



COMSATS Center of Excellence

ICCBS

1966-2016

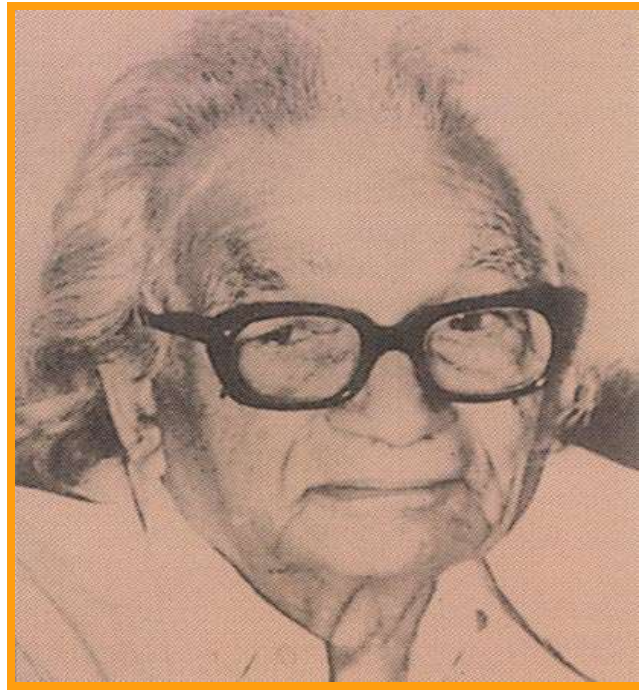
***Five Decades of Excellence and Leadership in
Research and Higher Education***

**International Center for Chemical and Biological Sciences
(H. E. J. Research Institute of Chemistry,
Dr. Panjwani Center for Molecular Medicine and Drug Research)
University of Karachi, Karachi-75270**



Genesis

- Post-graduate Institute of Chemistry (PGIC) was established in three small laboratories of the Chemistry Department (1966).
- PGIC was moved in to the new building “Husein Ebrahim Jamal Research Institute of Chemistry” in 1978 (Donated by Husein Ebrahim Jamal Foundation).
- Designated as the International Center for Chemical Sciences (ICCS) by the TWAS in 1987.
- Dr. Panjwani Center for Molecular Medicine and Drug Research established in 2004 (Donated by Dr. Panjwani Memorial Trust).
- Center was renamed as the International Center for Chemical and Biological Science (ICCBS) in 2004.



**Late Prof. Dr. Salim-uz-zaman Siddiqui, *H.I.,
F.R.S.***
Founding Director (1966-87)





PROF. DR. ATTA-UR-RAHMAN, *FRS, NI, HI, SI, TI*
(Director 1987-2008)
Patron-in-Chief





Late Mr. Latif Ebrahim Jamal, *H.I.*
Chairman
Husein Ebrahim Jamal Foundation





**Ms. Nadira Panjwani, *H.I., S.I.*
Chairperson
Dr. Panjwani Memorial Trust**





Prof. Dr. M. Iqbal Choudhary *H. I., S. I., T.I.*
Current Director ICCBS



ICCBS- Unique Distinctions

- Only OIC Center of Excellence in chemical sciences
- UNESCO Category II Center
- WHO Center for Pesticide Analysis
- Only institution which has received the Islamic Development Bank Prize for Best Science Institution (twice 2004 and 2010).
- TWAS Center of Excellence for training of scholars from Africa



HIGHEST RESEARCH OUTPUT

- ★ **Research publications in top international journals:** **Over 6,000**
- Patents (national and international)** **205**
- ★ **Books published internationally (over 150 by Prof. Atta-ur-Rahman):** **225**
- ★ **Total scientific impact factor:** **Over 8,000**
- ★ **Total Ph.D.'s/M. Phil./M. Sc. produced:** **Over 1,000**
- ★ **Total Citations** **Over 70,000**



DISTINGUISHED FACULTY

- ❖ Out of ten (10) most productive scientists of Pakistan, three (3) are from the H. E. J. Research Institute of Chemistry, International Center for Chemical Sciences.
(PCST Document, *Productive Scientists of Pakistan*, 2014)
- ❖ **Internationally Recognized Faculty. All Senior Professors with the D.Sc. degrees from various universities.**
- ❖ **Only Pakistani Institution with Two FRS (Fellows of Royal Society, London).**
- ❖ **Majority of the academic staff are the authors of internationally published science books or editors of science journals.**



MOST DECORATED ACADEMIC SCIENCE INSTITUTION

❖	Fellow of Royal Society (<i>FRS</i>)	2
❖	UNESCO Science Prize	1
❖	Nishan-e-Imtiaz	1
❖	Hilal-e-Imtiaz	4
❖	Sitara-e-Imtiaz	13
❖	Pride of Performance	1
❖	Tamgha-e-Imtiaz	8
❖	D. Sc.	10
❖	Khawarizmi International Award	5
❖	ECO Award and Prize	3



ICCBS INSTITUTIONAL EXCELLENCE



INTERNATIONAL GRANTS

I. International grants worth over \$ 50 million were won:

(a)	Germany	DM 5.7 million
(b)	USA	\$ 2.0 million
(c)	UK	£ 1.0 million
(d)	Japan	\$ 23.0 million
(e)	Others	\$ 3.0 million

2. Research projects worth another \$ 12.5 million from the WHO, OPCW, USAID, ONR, NSF (USA), and British Council have been completed.



ICCBS ORGANOGRAM

ICCBS

HEJRIC

PCMD

AURL IAC BTP LEJNRC LEJNSIC

Genome Center CBSCR Diagnostic Center IRCTRD Animal Houses

HEJRIC	Husein Ebrahim Jamal Research Institute of Chemistry
PCMD	Dr. Panjwani Center for Molecular Medicine and Drug Research
AURL	Prof. Dr. Atta-ur-Rahman Laboratories
LEJNSC	Latif Ebrahim Jamal National Science Information Center
IAC	Industrial Analytical Center
BTP	Biotechnology Park
Diagnostic Center	Diagnostic and Clinical Research Facility
CBSCR	Center for Bioequivalence Studies and Clinical Research
Genome Center	Jamil-ur-Rahman Center for Genome Research
IRCTRD	International Research Center for Tropical and Regional Diseases
LEJNRC	L. E. J. Nanochemistry Research Center
LEJNSIC	L. E. J. National Science Information Center

Chemical Sciences

Chemical Sciences

- H. E. J. Research Institute of Chemistry
- L. E. J. Nanochemistry Research Center
- Latif Ebrahim Jamal National Science Information Center
- Biotechnology Unit
- Technology Incubation/Industrial Park
- Industrial Analytical Center
- Medicinal Plant Processing Unit, Murree Expressway
- Marine Collection Center

Husein Ebrahim Jamal Research Institute of Chemistry

- **Sponsored by the Husein Ebrahim Jamal Foundation-
The largest donation to any science organization at
that time.**
- **Research program in the fields of natural products,
organic synthesis and protein chemistry were
initiated.**
- **Building was inaugurated in 1978.**



H. E. J. RESEARCH INSTITUTE OF CHEMISTRY (CONSTRUCTED IN 1978 WITH A GRANT FROM HUSEIN EBRAHIM FOUNDATION)



PROF. ATTA-UR-RAHMAN LABORATORIES
THIRD WORLD CENTER FOR CHEMICAL SCIENCES



LATIF EBRAHIM JAMAL NATIONAL SCIENCE INFORMATION CENTER
One of the Largest Paperless Libraries with 31,000 On-line Journals

L.E.J. Nanotechnology Center



Prof. Wolfgang Voelter Laboratory Complex



Prof. Dr. Dr. Wolfgang Voelter, S.P., H.P.
Tubingen University, Germany



Prof. Wolfgang Voelter Laboratories Complex
International Center for Chemical and Biological Sciences





INDUSTRIAL ANALYTICAL CENTER (IAC)



TECHNOLOGY INCUBATOR



TISSUE CULTURE TECHNOLOGY PARK



NEW MURREE RESEARCH CENTER

Biological Sciences

Biological Sciences

- Dr. Panjwani Center for Molecular Medicine and Drug Research
- Jamil-ur-Rahman Center for Genomics
- Center for Bioequivalence Studies and Clinical Research (CBSCR)
- Diagnostic Center Network
- Animal Houses

DR. PANJWANI CENTER FOR MOLECULAR MEDICINE AND DRUG RESEARCH

- Established in 2004 by Dr. Muhammad Husein Panjwani Memorial Trust.
- 20 Faculty members, 8 research officers, Over 110 students, and 4 Post. Doc.
- Focused areas include molecular immunology, stem cell research, diabetes, neuropharmacology, enzymology, computational medicinal chemistry, structural biology, molecular oncology, tissue culture, etc.
- Diagnostic and Clinical Research facility was established as service wing



**DR. PANJWANI CENTER FOR MOLECULAR MEDICINE
AND DRUG RESEARCH**



Center for Bioequivalence Studies and Bioassay Research
WHO and MoH Certified First Clinical Trial Facility in Pakistan



Jamil-ur-Rahman Center for Genome Research



New Animal House Facility



**Gene Knockout
unit-1**



New Animal House Facility

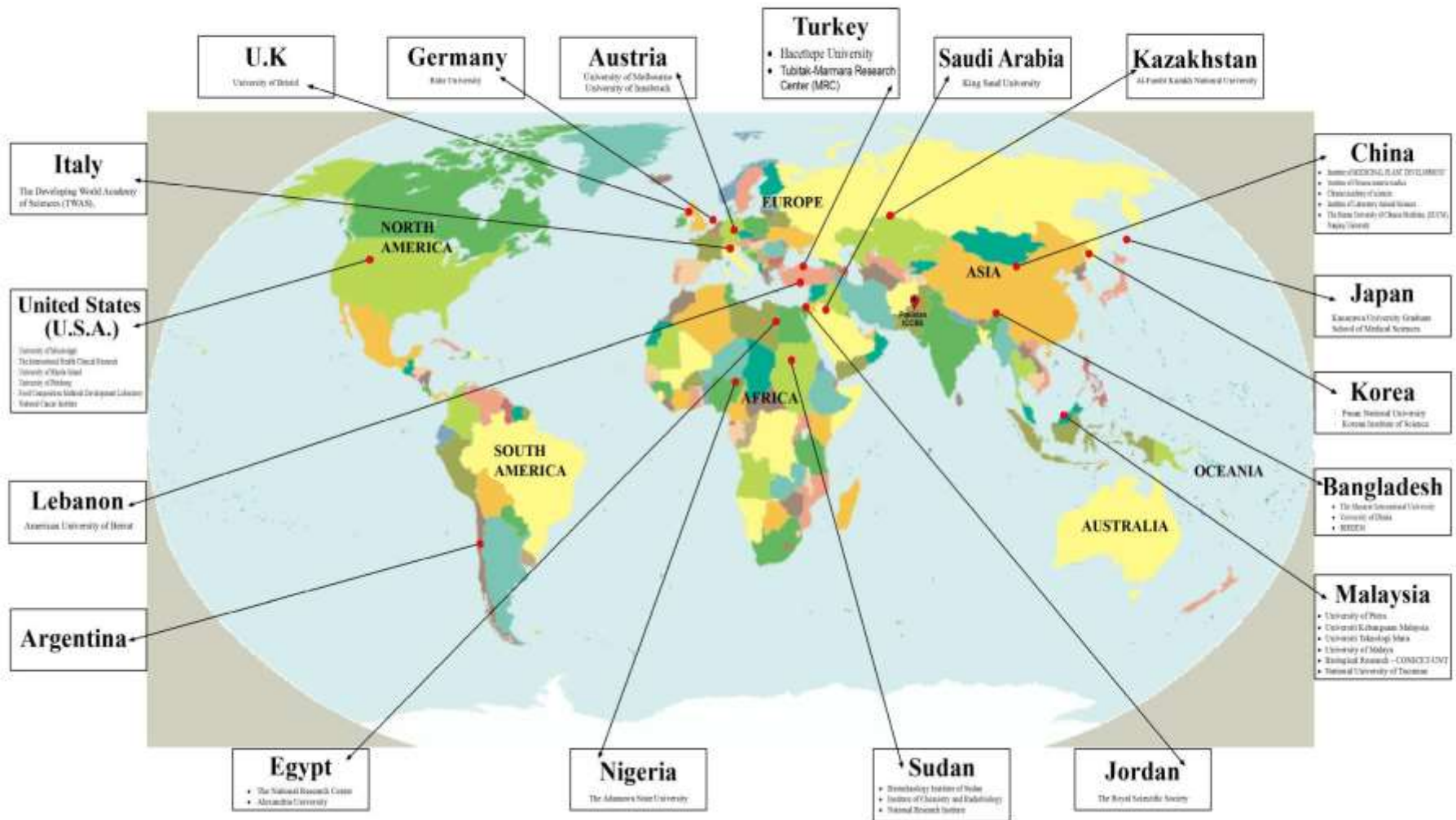
New animal research facility

52 Individually ventilated cages (IVC) cages



International Collaboration

INTERNATIONAL LINKAGES OF ICCBS



International Visitors and Events

- ★ Over 200 visiting scientists annually from different countries.
- ★ Only institution in the developing world in which advanced countries are sending students for training- *over 130 German students have already been trained.*
- ★ Over 200 major International Conferences, Symposia and workshops organized including the 19th IUPAC Symposium (1994), EURASIA Conference (2002), IBRO School (2006), ASOMPS (December, 2013), IUCr (2014), 16-EURASIA (2016).



Role in Global Capacity Building in S&T

- ★ **Joint supervision of MS/Ph. D. scholars with Jordan, Kazakhstan, Cameroon, Nigeria, Iran, Turkey, Malaysia, Saudi Arabia, Nepal, Bangladesh, Sri Lanka, Sudan, Egypt, Australia, etc.**
- ★ **Training of several young scholars from countries of South.**
- ★ **Capacity building workshops every year./ technician trainings.**
- ★ **Active MoUs and Agreements with over 60 institutions world over.**
- ★ **Knowledge sharing by online interactive courses and lectures**
- ★ **Library services and literature support.**



ICCBS 2025

ICCBS by 2025

- **Over 1,200 Ph. D. Students, including 200 foreign students**
- **150 Post-doctoral Scholars, and 80 Research Officers**
- **Over 200 Ph. D. annually**
- **Over 1000 research papers in top international journals including top tier journals., and over 100 international patents**
- **Technology incubator with 100 companies, and five industrial support unit**
- **30% of the budget by self generation (Royalties, and services)**

PHASING OF EMERGING PROJECTS (2006 – 2020)

Institution	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
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1. Industrial Linkages-
Technology and
Technology Incubator



2. Development of 50 Acre
of additional



3. Food and Nutritional
Science Institute



4. Bioequivalence and
Biology Study Center



5. Strengthening of PCMD



6. National Imaging
Facility



7. Center for
Nanochemistry Research



8. Strengthening of IAC



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ICCBS- UNIQUE FEATURES

- ★ **Role of leadership (Internationally renowned leader, Prof. Atta-ur-Rahman *FRS*).**
- ★ **Role of private sector.**
- ★ **Contractual appointment of faculty members.**
International evaluation of research productivity.
Faculty must have external funding
- ★ **Good salaries and grades to engineering staff.**
- ★ **Strong international linkages.**
- ★ **Well subscribed library system and other information sources.**
- ★ **More funds for R&D (70% of the annual budget).**

ICCBS- UNIQUE FEATURES

- Scholarships for all PhD students
- External review every five year by top academicians of the world.

WHAT ICCBS CAN OFFER TO COMSATS Member Countries ?



Research Trainings

- **Training visits of young scholars**
- **No bench fee**
- **On-campus accommodation**
- **State-of-the-art instrumental facilities**
- **Over 100 bioassays and access to animal house facility**
- **Excellent libraries**
- **International, friendly and conducive working environment**

Academic Collaboration

- On-lines courses through VEPP (Video conferencing Program Pakistan)
- Technician training
- Senior scientists visits
- Binational and multi-national workshops

Joint Research Programs

- Collaborative Research Projects
- Field Surveys
- Joint Disease Genomics Projects
- **Submission of Joint projects to international funding agencies**
- **Other services, such as proficiency testing, instrumental calibration, etc.**

Scholarships/ Schemes

Joint NAM S&T Centre-ICCBS Karachi (Pakistan) Fellowship

www.namstct.org

TWAS Fellowship Program

<http://www.iccs.edu/twas.php>

COMSTECH Visiting Scientists Program

<http://www.comstech.org/Programs>

Contact Details:

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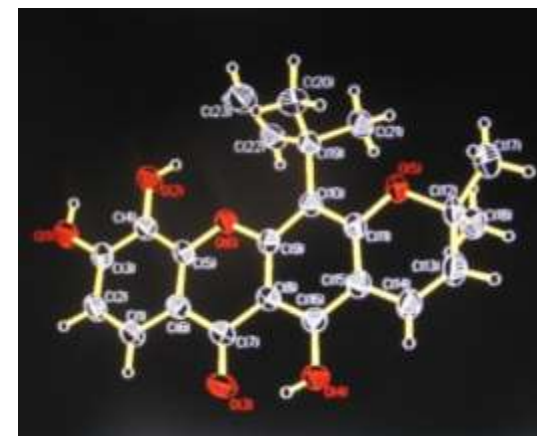
**ICCBS
IN
PHOTOGRAPHS**



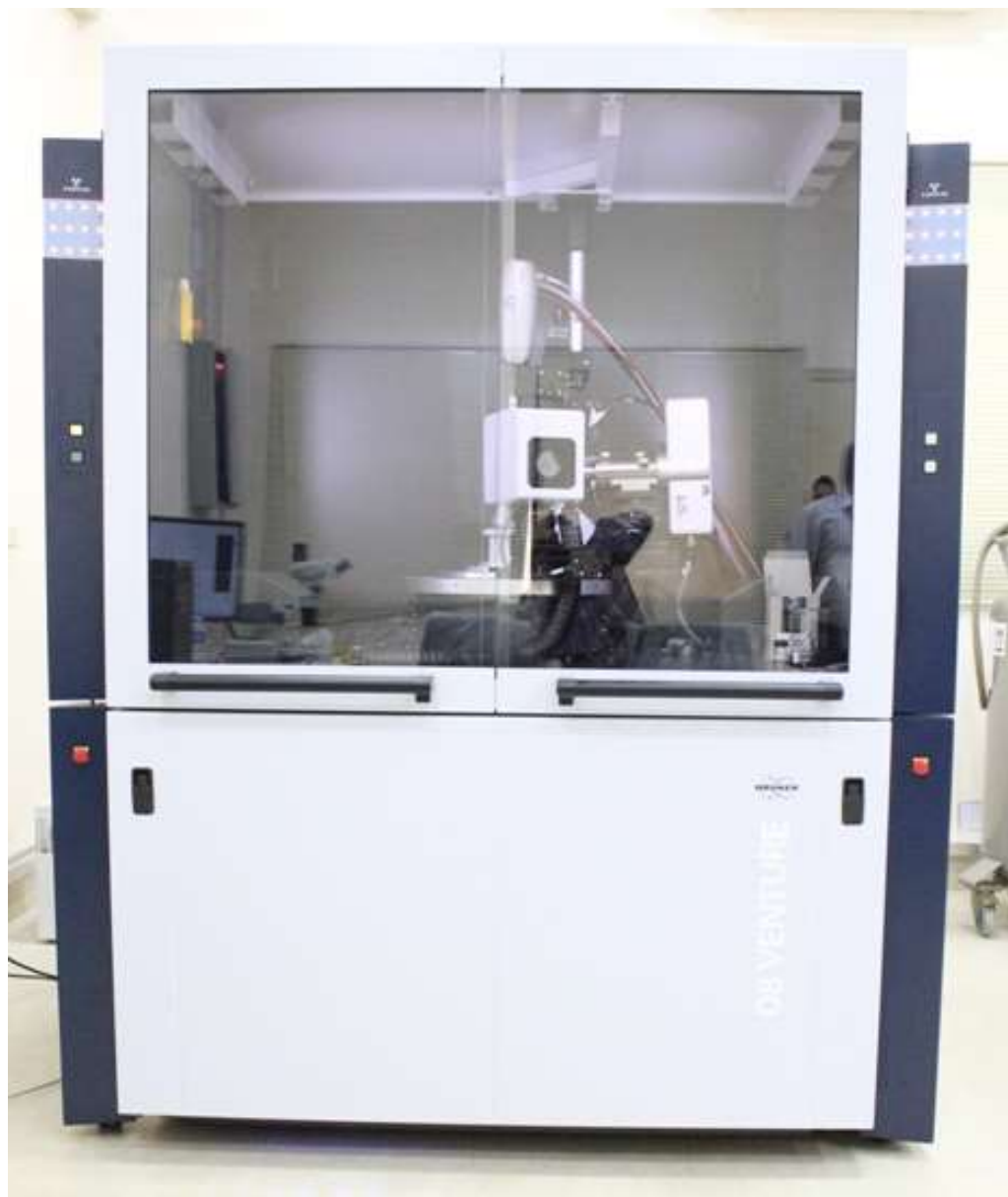
ONE OF THE MANY INTERNATIONAL GUEST HOUSES



INSIDE VIEW OF THE INTERNATIONAL GUEST HOUSES



SINGLE-CRYSTAL X-RAY DIFFRACTION LABORATORY



BRUKER D8 VENTURE

***Small chemicals and
Biomolecules***

SINGLE-CRYSTAL X-RAY DIFFRACTION LABORATORY



800 MHz Nuclear Magnetic Resonance (NMR) Spectrometer



NUCLEAR MAGNETIC RESONANCE SPECTROMETERS



NUCLEAR MAGNETIC RESONANCE SPECTROMETERS



MALDI-TOF (Ultra-flex-III)



MASS SPECTROMETER (ELECTRON BOMBARDMENT SYSTEM)



MASS SPECTROMETER (ELECTROSPRAY IONIZATION)



UPLC

BIO BANK AT PCMD





ONE OF THE ICCBS LIBRARIES
One of the Finest in the Field of Chemical Sciences

**ONE OF THE GREEN HOUSES FOR VIRUS-FREE
BANANA VARIETIES**



BIOTECHNOLOGY DIVISION



PLANT BIOTECHNOLOGY DIVISION



PILOT PLANT



MOLECULAR BANK AT THE PCMD
Over 14,000 Fully Characterized Compounds



COMPOUND BANK AT THE PCMD



DIAGNOSTIC LABORATORY AT THE PCMD



PATCH CLAMP FACILITY AT PCMD



TISSUE CULTURE FACILITY AT THE PCMD



CANCER CELL LINES AT PCMD



FLORESCENCE MICROSCOPIC LABORATORY



ATIONAL CHEMISTRY LABORATORY



IMMUNOLOGY LABORATORY



NEUROPHARMACOLOGY LABORATORY



PHARMACOLOGY LABORATORY



STEM CELL RESEARCH LABORATORY



**DATABASE SEARCHING FACILITY OF THE
LATIF EBRAHIM JAMAL NATIONAL SCIENCE CENTER**



**VIDEO CONFERENCING OF THE
LATIF EBRAHIM JAMAL NATIONAL SCIENCE CENTER**



**VIDEO LECTURE FACILITY OF THE
LATIF EBRAHIM JAMAL NATIONAL SCIENCE CENTER**



Pictures of some Germans students visited the institute



CBSCR Bio-analytical Unit



CBSCR Drug Extraction Lab



CBSCR Bio-analytical Unit



CBSCR Bio-analytical Unit



FEW STUDENTS OF ICCBS



FOREIGN FACULTY AND STUDENTS



Director ICCBS, with French Delegates



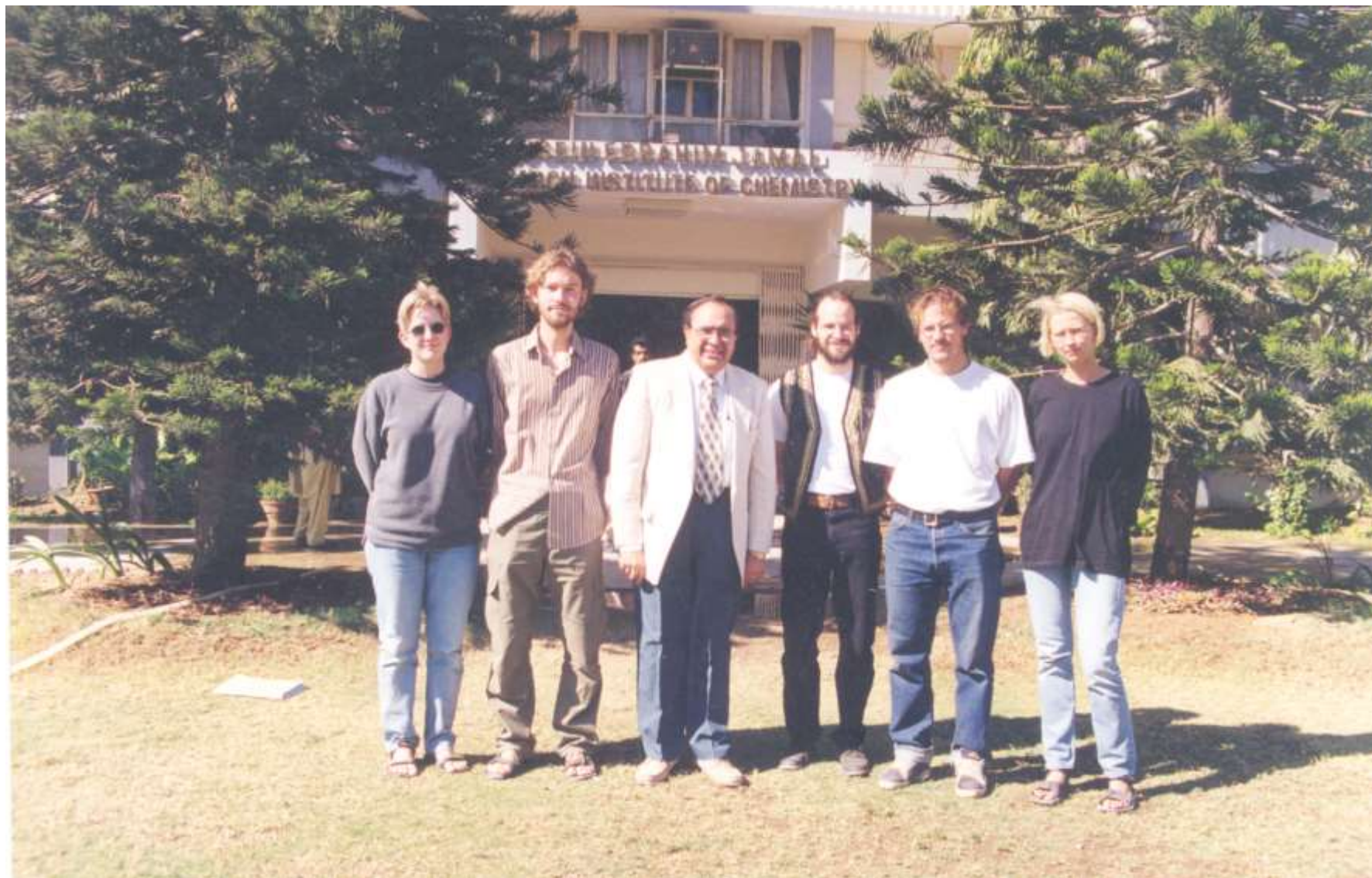
Director ICCBS, with French Delegates



VISIT OF FACULTY FROM UNIVERSITY OF RHODE ISLAND



A GROUP OF GERMAN STUDENTS



GERMAN STUDENTS ON TRAINING



FOREIGN FACULTY AND STUDENTS



FOREIGN FACULTY AND STUDENTS



FOREIGN STUDENTS



FOREIGN STUDENTS



FOREIGN STUDENTS



ICCBS Group Photograph, 2015

THANK YOU VERY MUCH