

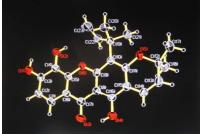


## INTERNATIONAL CENTER FOR CHEMICAL AND BIOLOGICAL SCEINCES (ICCBS)

## COMSTAS Center of Excellence Past, Present, and Future

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





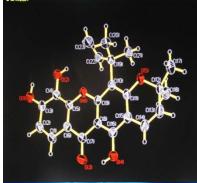


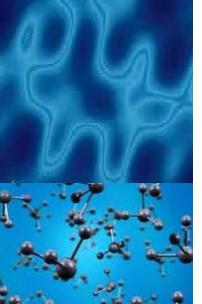


PhD

We intend to be a preeminent academic research and teaching institution, which is recognized as a world leader in training of scholars and for research in frontier fields of science and technology.











PhD

We are the institution of higher learning which impart highest quality research training to its students in frontier fields of science and technology. We strive to contribute in the fulfilling the need of quality manpower in science and technology and expect that our graduates will serve the nation and humanity at large.







 Fulfillment of the dreams of Late Prof. Abdus Salam, Nobel Laureate and Prof. Salim uz Zaman Siddiqui (FRS)

PhD

- Affiliated with The Academy of Sciences for The Developing World (TWAS)
- 1 At par to:
  - 1 ICTP (International Center for Theoretical Physics), Trieste, Italy
  - ICGB (International Center for Genetic and Biotechnology), Delhi (India), Trieste (Italy) and Durban (South Africa)
  - 1 ICMS (International Center in Mathematical Sciences), Sao Palo, Brazil
  - 1 ICES (International Center for Environmental Sciences), Beijing, China

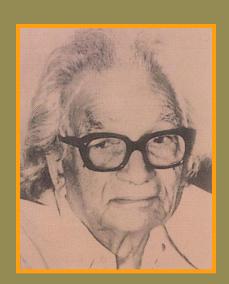






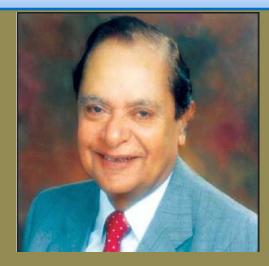






Late Prof. Dr. Salim-uz-zaman Siddiqui, *H.I., F.R.S.* Founding Director (1966-87)





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





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





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





#### PROF. DR. ATTA-UR-RAHMAN, FRS

Patron-in-Chief





### Prof. Dr. M. Iqbal Choudhary H. I., S. I., T.I. Current Director ICCBS 2002- today



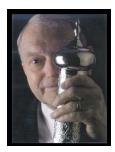
## **AN INSTITUTIONAL MODEL**

Nucleus was established in 1966 by Late Prof. Dr. Salim-uz-Zaman Siddiqui in a small laboratory of Department of Chemistry, University of Karachi.



Prof. Atta-ur-Rahman *FRS, N.I., H.I., S.I., T.I.* joined in 1969 on his return from Cambridge, UK.

First international grant in 1972 (2.3 million DM) through the efforts of Prof. Wolfgang Voelter (*Hilale-Pakistan, Sitara-e-Pakistan*).





Received a donation from Late Mr. Latif Ebrahim Jamal (Husein Ebrahim Foundation) in 1976.

Selected as the *International Center for Chemical and Biological Sciences* in 1986 after a stiff international competition.





- Constituent institution of the University of Karachi, the second best university in Pakistan, and 223 (natural sciences) in world ranking (Oxford, 2009).
- ① Nucleus was established in 1966 by Late Prof. Dr. Salim-uz-Zaman Siddiqui in a small laboratory of Department of Chemistry, University of Karachi.
- 1 Prof. Atta-ur-Rahman *FRS, N.I., H.I., S.I., T.I.* joined in 1969 on his return from Cambridge, UK.
- 1 First international grant in 1972 (2.3 million DM) through the efforts of **Prof.Wolfgang Voelter** (*Hilal-e-Pakistan*, *Sitara-e-Pakistan*).
- 1) Received a donation from Late Mr. Latif Ebrahim Jamal (Husein Ebrahim Foundation) in 1976.
- ① Selected as the International Center for Chemical Sciences in 1986 after a stiff international competition.





# Prof. Atta-ur-Rahman (UNESCO Laureate) with Prof. Dr. Abdus Salam (Nobel Laureate from Pakistan)









# **HIGHEST RESEARCH OUTPUT**

| * | Research publications in top international journals:                 | Over 4,800 |
|---|--|------------|
|   | Patents (national and international)                                 | 155        |
| * | Books published internationally<br>(over 90 by Prof.Atta-ur-Rahman): | 185        |
| * | Total scientific impact factor:                                      | Over 4,900 |
| * | Total Ph.D.'s produced:  | Over 580   |

**\*** Total Citations



Over 35,000



- Out of ten (10) most productive scientists of Pakistan, five (5) are from the H. E. J. Research Institute of Chemistry, International Center for Chemical Sciences.
   (PCST Document, Scientists of Pakistan, 2008)
- Internationally Recognized Faculty. All Senior Professors with the D.Sc. degrees from various universities.
- Only Pakistani Institution with Two FRS.
- Majority of the academic staff are the authors of internationally published science books or editors of science journals.



|    | MOST DECORATED AC<br>SCEINCE INSTITUT |    |
|----|---------------------------------------|----|
| ** | Fellow of Royal Society (FRS)         | 2  |
| *  | UNESCO Science Prize                  | I  |
| *  | Nishan-e-Imtiaz                       | I  |
| *  | Hilal-e-Imtiaz                        | 4  |
| *  | Sitara-e-Imtiaz                       | 13 |
| *  | Pride of Performance                  | I  |
| *  | Tamgha-e-Imtiaz                       | 8  |
| *  | D. Sc.                                | 10 |
| *  | Khawarizmi International Award        | 5  |
|    | ECO Award and Prize                   | 3  |
|    |                                       |    |

 AVAVANT



Prof. Dr. Atta-ur-Rahman receiving the UNESCO Science Prize (2004)





# Prof. Dr. Atta-ur-Rahman signing the famous book of Royal Society as a Fellow



### **INTERNATIONAL STATUS**

- **\*** One of the best in the field of chemical sciences
- **\*** Designated as the:
  - a. **OIC Center of Excellence**
  - b. World Health Organization Center for Pesticide Analysis for Eastern Mediterranean Region.
  - c. COMSATS Center of Excellence.
  - d. **COMSTECH** Library Center.
  - e. Islamic Development Bank Prize for Best Science Institution in the Islamic World.
  - f. **TWAS Center of Excellence**.
  - g. UNCSTD Center of Excellence.





- Over 200 visiting scientists annually from different countries.
- Only institution in the developing world in which advanced countries are sending students for training- 20 German students annually, over 130 German students have already been trained.
- Over 70 International Conferences, Symposia and workshops organized including the 19th IUPAC Symposium (1994), EURASIA Conference (2002), IBRO School (2006) and ASOMPS (planned for 2012)



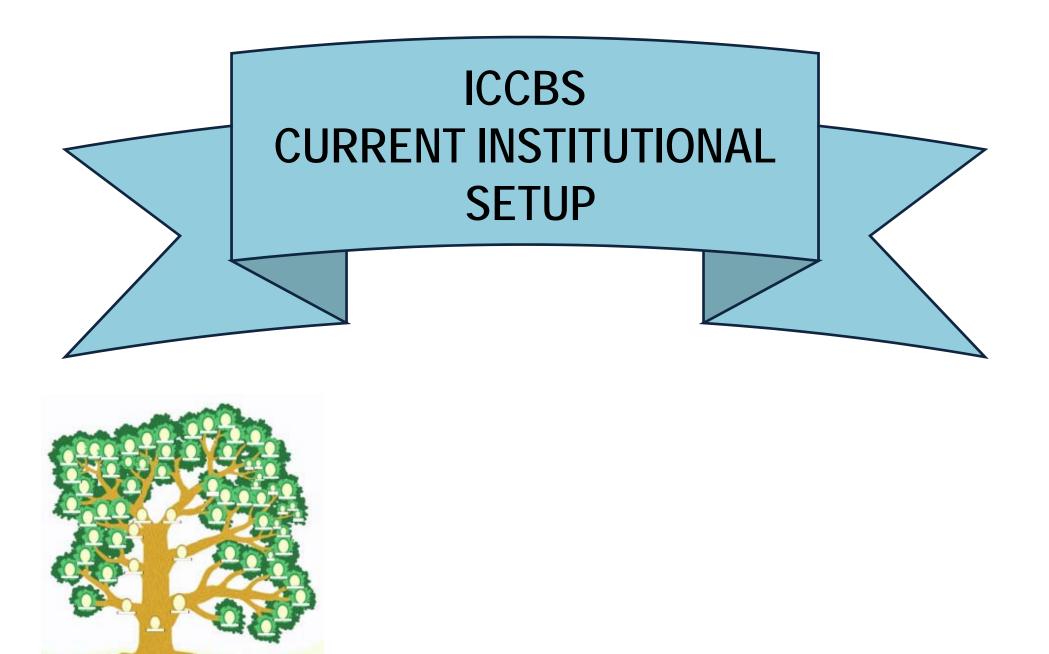
## **INTERNATIONAL GRANTS**

I. International grants worth over \$15 million were won:

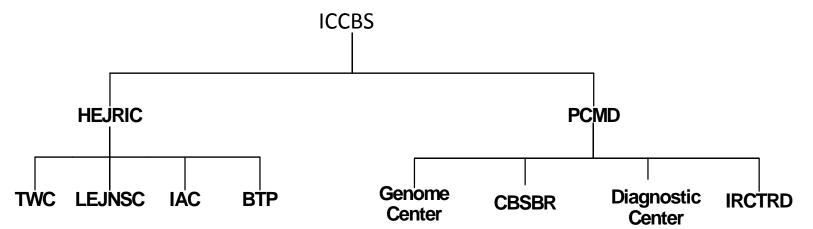
| (a)        | Germany | DM 5.7 million |
|------------|---------|----------------|
| <b>(b)</b> | USA     | \$ 2.0 million |
| (c)        | UK      | £ 1.0 million  |
| (d)        | Japan   | \$ 8.0 million |
| (e)        | Others  | \$ 2.0 million |

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

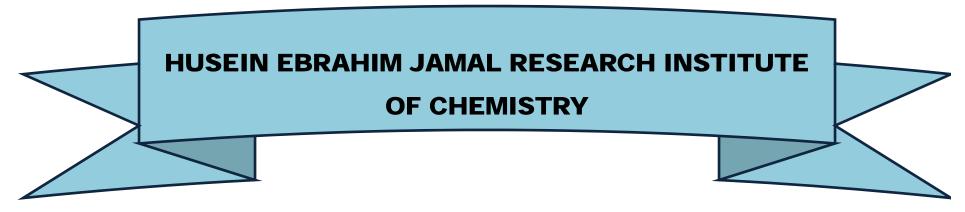




# **ICCBS ORGANOGRAM**



| HEJRIC            | Husein Ebrahim Jamal Research Institute of Chemistry             |
|-------------------|--|
| PCMD              | Dr. Panjwani Center for Molecular Medicine and Drug Research     |
| TWC               | Third World Center Laboratory Complex                            |
| LEJNSC            | Latif Ebrahim Jamal National Science Information Center          |
| IAC               | Industrial Analytical Center                                     |
| ВТР               | Biotechnology Park   |
| Diagnostic Center | Diagnostic and Clinical Research Facility                        |
| CBSBR             | Center for Bioequivalence Studies and Bioassay Research          |
| Genome Center     | Jamil-ur-Rahman Center for Genome Research                       |
| IRCTRD            | International Research Center for Tropical and Regional Diseases |



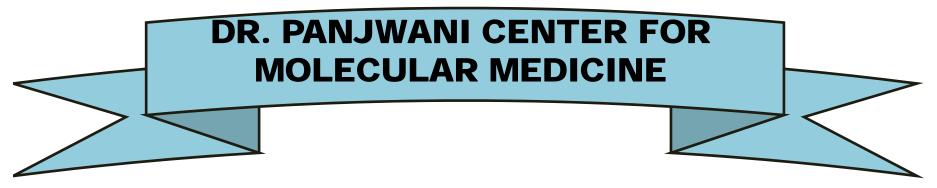
- ① Established 1967.
- ① Funded by the Husein Ebrahim Jamal Foundation
- ① Specialized in the fields of organic and bio-chemistry
- ① WAITRO Center
- ① COMSATS Center
- ① House the National Library of Chemical Sciences



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

# Dr. Muhammad Husein Panjwani

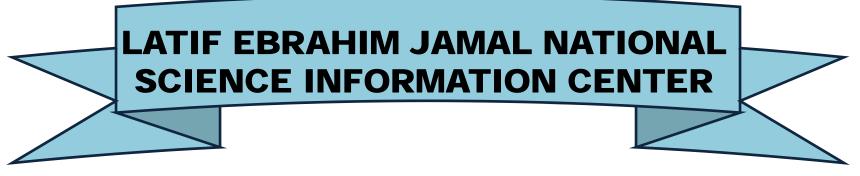




- 1 Only institution of molecular health sciences in the Muslim world
- ① Established in 2004 by Dr. Muhammad Husein Panjwani Memorial Trust
- ① An endowment of US \$ 1 million was created
- 15 Faculty members, two research officers, Over 50 Students, 4 Post. Doc.
- ① Focused areas include molecular immunology, stem cell research, diabetes, neurophmacology, enzymology, computational medicinal chemistry, structural biology, molecular oncology, tissue culture, etc
- ① Diagnostic and Clinical Research facility was established as service wing



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



- ① One of the largest science information centers in the developing world.
- ① Building donated by the Husein Ebrahim Foundation.
- Digital Library, Digitization of Books, Video-conferencing Facilities, On-line and Born Digital Books and journals.
- 1 PABIC (Pakistan Biotechnology Information Center), DNA Dolmen Center, APTMNET (Asia Pacific Traditional Medicine Network)



LATIF EBRAHIM JAMAL NATIONAL SCIENCE CENTER One of the largest Paperless Libraries in the Region/Digital Library (Building donated by Husein Ebrahim Foundation)

## INDUSTRIAL ANALYTICAL CENTER

- **Serving over 350 industries annually**
- New products development
- Raw material testing
- Quality improvement/control/assurance
- \* International certification
- Industrial informatics
- \* Pesticide residue and toxic metal analysis
- Toxicity testing



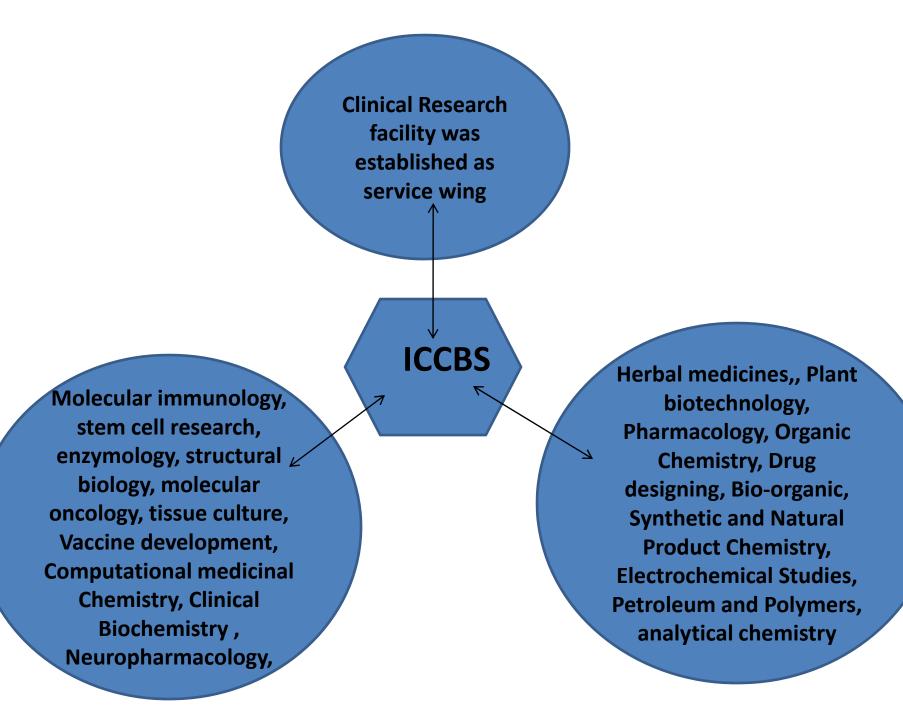
- \* Service wing of the Third World Center for Chemical Sciences.
- **\*** Tissue culture
- **\*** Viral diagnosis
- **\*** New varieties of banana and pineapples
- \* Exotic orchids and other flowering plants
- \* Cell-culture for secondary metabolites





## The largest doctoral program in the country producing over 80 world class Ph.D.S every year





# ICCBS PLANNED FUTURE INSTITUTIONS





- Center for Bioequivalence Studies and Bioassay Research (CBSBR) PCMD (Established and functioning)
- 1 Technology Incubator and Research Park ICCBS (under construction)
- ① Center for Nanochemistry Research HEJRIC (under construction)
- **1** Jamil-ur-Rahman Research Center for Genomics (under construction)
- 1 Nuroscience Research Center PCMD
- International Research Center of Tropical and Regional Diseases (IRCTRD)
  PCMD
- 1 Industrial Biotechnology Center
- 1 National Imaging Facility



- **①** Strengthening of the Industrial Analytical Center (IAC)
- Strengthening of the Dr. Panjwani Center for Molecular Medicine and Drug Research (PCMD) (Phase II)
- ① Strengthening of the H. E. J. Research Institute of Chemistry (Phase-III)



- Development of 200 Acre of land, provided by the University of Karachi (roads, water and sewerage lines, gas and electricity) (core work completed)
- **①** Construction of Scholars Hostels
- **①** Construction of Conference Facilities (completed)
- 1 Sports Center, Recreational Facilities and Clinic (under construction)



- Over I,200 Ph. D. Students (Current Ph. D. enrolment 500)
- ① **I 50 Post-doctoral Scholars**
- ① 80 Research Officers

## PHASING OF EMERGING PROJECTS (2006 – 2020)

| Institution | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Institution | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
|             | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |

- 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







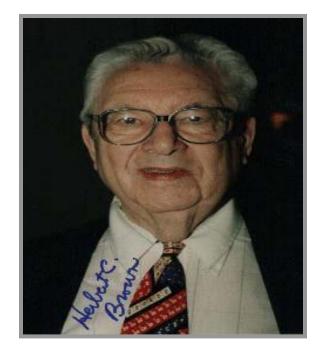


| Institution  | 2006   | 2007      | 2008      | 2009      | 2010      | 2011   | 2012      | 2013      | 2014      | 2015      | 2016      | 2017      | 2018      | 2019      | 2020      |
|--|--------|-----------|-----------|-----------|-----------|--------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|  | - 2007 | -<br>2008 | -<br>2009 | -<br>2010 | -<br>2011 | - 2012 | -<br>2013 | -<br>2014 | -<br>2015 | -<br>2016 | -<br>2017 | -<br>2018 | -<br>2019 | -<br>2020 | -<br>2021 |
| 1. Nanochemistry and<br>Material Science<br>Center                           |        |           |           |           |           |        |           |           |           |           |           |           |           |           |           |
| 2. Jamil-ur-Rahman<br>Center for Genome<br>Research                          |        |           |           |           |           |        |           |           |           |           |           |           |           |           |           |
| 3. Industrial<br>Biotechnology Hoste   | ls     |           |           |           |           |        |           |           |           |           |           |           |           |           |           |
| 5. Construction of<br>Scholars Hostels                                       |        |           |           |           |           |        |           |           |           |           |           |           |           |           |           |
| 6. Construction of<br>Conference Facilities                                  | 5      |           |           |           |           |        |           |           |           |           |           |           |           |           |           |
| 7. International<br>Research Center for<br>Tropical and<br>Regional Diseases |        |           |           |           |           |        |           |           |           |           |           |           |           |           |           |
| 6 Neuroscience Center  |        |           |           |           |           |        |           |           |           |           |           |           |           |           |           |
| 8. Sports Center,<br>Recreational<br>Facilities, and Clinic                  |        |           |           |           |           |        |           |           |           |           |           |           |           |           |           |
| 9. Strengthening of<br>H. E. J. Research<br>Institute of<br>Chemistry        |        |           |           |           |           |        |           |           |           |           |           |           |           |           |           |



- Role of leadership (Internationally renowned leader, Prof.Atta-ur-Rahman).
- **\*** Role of private sector.
- Contractual appointment of faculty members.
  International evaluation of research productivity.
- **★** 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).
- \* Institution which invite and facilitate external review.

#### **REMARKS OF Prof. Herbert C. Brown** Nobel Laureate R. B. Wetherill Professor of Chemistry USA



" Under Prof. Atta-ur-Rahman's able guidance, this Institute has become one of the finest in the world, in terms of the facilities, the quality of work and the scientists that it produces".

#### <u>REMARKS OF Prof. Dr. R.R. Ernst</u> Nobel Laureate Switzerland



"Professor Atta-ur-Rahman is one of the world-wide leading scientists in natural product chemistry and in the important field of nuclear magnetic resonance. The number as well as quality of his research publications and in particular his books are highly astonishing".

#### **REMARKS OF Prof. Sir D.H.R. Barton**

Nobel Laureate Texas A&M University USA



"Prof. Atta-ur-Rahman is the motor which has propelled the H.E.J. Research Institute of Chemistry from a little Institution into the best Research Laboratory in Natural Product Chemistry in the Developing World".



- An institution which demonstrates that it is possible to build world-class science institutions in Pakistan.
- An institution which has served the nation in many ways.
- ① An institutional model for others to follow.



- 1. The Center has produced over 400 Ph.D. scholars and 150 M.Phil. scholars with world-class training in the relevant fields of chemical, pharmaceutical, Industrial and biochemical sciences.
- 2. These trainings within the country on nationally relevant topics have led to a saving of over Rs. 5 billion, along with the strengthening of indigenous S&T institutions and research capacity.
- 3. The graduates of the Center have been serving in top chemical and pharmaceutical industries of Pakistan at leading positions. These graduates have played a key role in making the pharmaceutical industry of Pakistan export-based, earning millions of dollars for the country annually.



- 4. The Center is serving over 350 Industries of Pakistan, by providing them world-class analytical and consultancy services, this is also leading to a saving of millions of dollars.
- 5. The Center is also earning over Rs. 40 million annually from various services to industries, despite the fact that most of these services are offered on cost-plus basis in order to support industrial development.
- 6. The Center has a world class Industrial Analytical Centers, recognized for its quality and credibility.
- 7. The Center has an expanding network of diagnostic centers, which are providing pathological and diagnostic facilities to common people, as well as helping the scientists in their clinical research.



- 8. The Center has been helping the Pakistan Customs since last 20 years. Many of the long-standing analytical problems were solved by using the most sophisticated instrumental facilities. This has led to the collection of duties and taxes of billions of rupees, which were otherwise not possible due to misreporting and malpractices.
- 9. The Biotechnology Division of the Center has developed several new varieties of bananas, orchids and other important crops. Many of these varieties have already been commercialized and progressive farmers are benefiting from these innovations.
- 10. The Center has trained thousands of young graduates in various skills, such as horticulture, tissue culture, pharmaceutical services, diagnostic services, and food and pharmaceutical analysis, thus helping in generating employable skills in the country.



- **1.** Finest academic research Institution in the field of Natural Product Chemistry.
- 2. Only Institution in the Islamic world where 20 German students are coming for research trainings every year. Over 120 German students have already been trained.
- 3. Only institution in the Islamic world where six Nobel Laureates have visited, reviewed the research programs, and praised the quality.
- 4. Only institution in the Islamic world, which produces 50-60 top-class Ph.D.'s every year in the field of chemical and biochemical sciences.



- 5. Only institution in the Islamic world, which has been designated as the focal center for trainings of young scholars from Afro Asian Countries by Non-aligned Movement (NAM) Science Center.
- 6. Only institution in the Islamic world, which has been designated as the "World Health Organization Collaborating Center in Pesticide Analysis and Research".
- 7. Only institution in the Islamic world with overall investment of US \$ 45 million in scientific instrumentation and infrastructure.
- 8. Only institution in the Islamic world, with over 4,000-research publications in top international journals and over 130 internationally published books .



- 9. Only institution in the Islamic world, which has organized one of the largest chemical science events, the IUPAC conference in 1994.
- 10. Only institution in the Islamic world where scholars from 25 Muslim countries are visiting for research training and Ph. Ds.
- 11. Only institution in the Islamic world which was largely established through donations from private sector/philanthropic organizations.
- 12. An institution with ISO 9001-2000 certificate.
- 13. Only academic institution with ISO 17,025 certified analytical laboratories.



- 13. Ministry of Health accredited Bioequivalence center and first clinical trial facility
- 14. An institution which invite external review every year to identify its strengths and weaknesses.
- 15. An institution with state of the art Industrial Analytical Center (IAC) to help industries in Pakistan and in the region.
- 16. An institution which has been regarded as most a successful example of private-public partnership for science capacity building in developing world.



- 1. First Total Synthesis of the Anti-Cancer drug Vinblastine (British Patent).
- 2. Production and Commercialization of Environmental Friendly Neem-Based Pesticides.
- 3. Discovery and Development of Bating Enzyme for Lather Softening.
- 4. Development of Cholesterol-Lowering Additives.



- 5. Development of most Potent Anti-epiletic Drug (isoloxylitone) which is in initial stages of development and patented internationally.
- 6. New varieties of virus free Bananas and Pineapple.
- 7. Development and Commercialization of New Orchid Plants.
- 8. Analytical Services to over 400 Industries annually throughout the Country.
- 9. The genome of first Muslim and Pakistani (9<sup>th</sup> nation in the world) was completely mapped in collaboration of Beijing Genomic Institute.



- Complete Genome of three ethnic groups in Pakistani.
- H.E.J. Institute Selected as the OIC Center of Excellence in Chemical Sciences
- Procurement of Major New Instruments for the ICCBS Institutions:
  - High Speed Genome Sequencer (PCMD)
  - Triple Quradrapole ICP-MS (HEJ)
  - Fast Protein Liquid Chromatography's (FPLC) (PCMD)
  - Avance III New Console for the 400 MHz NMR (HEJ)
  - Equipment for Textile Chemical Laboratory (HEJ)
  - Diesel Generator 350 KVA (ICCBS)
  - Cryoprobe 3 mm for 600 MHz NMR (HEJ)
  - LC-MS/MS (CBSBR, PCMD)
  - 800 MHz NMR Spectrometer (in process) (HEJ)



- Establishment L. E. J. Nanochemistry Center
- Establishment of Jamil-ur-Rahman Center for Genome Research
- 380 scientific papers in leading international journals during 2013 (The cumulative impact factor over 600 (Scopus, Web of Knowledge, 2013).
- 11 US patents.
- 68 M. Phil. / Ph.D. and over 20 scholars under joint supervision.
- Organized six international conferences, symposia and workshops in 2012-13.



Prof. Dr. Muhammad Iqbal Bhangar (HEJ)

Prof. Dr. Darakhshan J. Haleem (PCMD) (Biochemistry)

Dr. Rizwana S. Waraich (PCMD)

Dr. Saima Jalil (PCMD)

Dr. Ayaz Ahmad (PCMD)

Dr. Reaz Uddin (PCMD)

Dr. Meera Malik (PCMD)

Dr. Ishtiaq Ahmad Khan (PCMD)



- Asian Symposium on Medicinal Plants, Spices and Other Natural Products (ASOMPS IV)
- 5<sup>th</sup> International Symposium on Molecular Medicine (MMDR-5)
- International Year of Crystallography Regional Summit (Vistas in Structural Chemistry)
- National Science Conference of Pakistan Academy of Sciences
- Patent Protection for R&D (Jointly organized by PASTIC, PSF and ICCBS).



Dr. Daniel Hoessli, Switzerland Dr. Hartmut Wellerdte, Germany Dr. Mujeeb Uddin Shad, USA Prof. Dr. Sumaira Amir, USA Dr. Munir Ozturk, Turkey Dr. Ursula Ann Karra, Germany Prof. Dr. Ayhan Ulubelen, Turkey Prof. Dr. Bohari M. Yamin, Malaysia Prof. Dr. David L. Smith, USA

#### Visit of Eminent Foreign Scholars(2013)

Prof. Dr. Elias Baydoun, Lebanon Prof. Dr. Heiko Iven, Germany Prof. Dr. Iqbal Ahmed, Malaysia Prof. Dr. Khalilur Rahman, Bangladesh Prof. Dr. Laura D. Shirtellif, USA Prof. Dr. Massimo Bertino, USA **Prof. Dr. Nicholas Levents, USA** Prof. Dr. Suchi Gua, Columbia **Prof. Dr. Thomas Nugent**, Germany Dr. Aftab Ahmed, USA Dr. Aliya Malik, UK Dr. Azwani, Malaysia



High Speed Genome Sequencer(JRCGR, PCMD)Atomic Force Microscope(HEJ)LC/MS/MS 6460 Agilent(CBSBR, PCMD)Genome Analyzer 5500XL System(HEJ)Vibration Free Cooling Incubator(PCMD)Airstream® Class II Biological Safety Cabinets(PCMD)Dry Shipper(PCMD)

# WHAT ICCBS CAN OFFER TO COMSATS COLLEAGUES?



## **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
- In some cases, financial support for living expenditures
- Cost of living is very affordable (Less than \$ 200 per month)

## **Academic Collaboration**

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

## **Global Virtual Education Program**

- Global Initiative for quality teaching of science and technology at all levels
- Over 18,000 courses, downloaded and licensed for educational purposes
- Available for free sharing
- Managed and operated by the LEJ Center (ICCBS) under the patronage of Higher Education Commission, COMSTECH and Commonwealth of Learning

### **Joint Research Programs**

- Collaborative Research Projects
- Field Surveys
- Joint Disease Genomics Projects

#### **Scholarships/ Schemes**

Joint NAM S&T Centre-ICCBS Karachi (Pakistan) Fellowship <u>www.namstct.org</u>

TWAS Fellowship Program http://www.iccs.edu/twas.php

COMSTECH Visiting Scientists Program http://www.comstech.org/Programs

## Access to Spectroscopic and Bioassay Facilities

- Access to excellent spectroscopic facilities
- Bioassay screenings
- Clinical trial facilities
- In vivo assays
- Library document delivery system
- Molecular Bank (Over 12,000 compounds now)
- Extract Bank (Over 5,000 plant extract)
- Bio Bank (hundreds of Cell lines and fungal cultures)

## ICCBS IN PHOTOGRAPHS



H. E. J. RESEARCH INSTITUTE OF CHEMISTRY (Constructed In 1978 With A Grant From Husein Ebrahim Foundation)



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



### PROF. DR. 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



### HEJRIC NEW RESEARCH LABORATORY

## INDESTREAL ANALYTICAL CENTER (I.A.C.) I.C.C.B.S

### **INDUSTRIAL ANALYTICAL CENTER (IAC)**



### **INTERNATIONAL GUEST HOUSE**



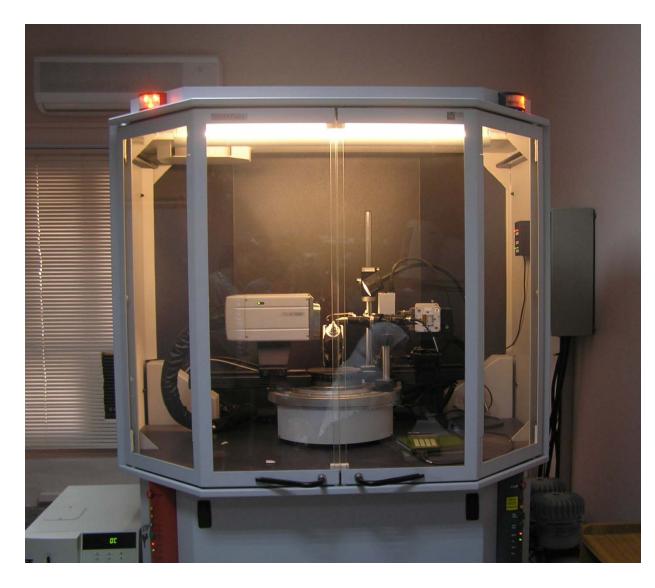
### TISSUE CULTURE TECHNOLOGY PARK

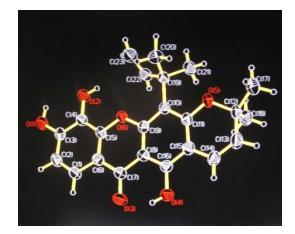


### CENTER FOR BIOEQUIVALENCE STUDIES AND BIOASSAY RESEARCH



### MALDI-TOF (Ultra-flex-III)





### SINGLE-CRYSTAL X-RAY DIFFRACTION LABORATORY





### NUCLEAR MAGNETIC RESONANCE SPECTROMETERS

# MAT 95 XP

### MASS SPECTROMETER (ELECTRON BOMBARDMENT SYSTEM)

### 1.1 MAT 95 XP

### MASS SPECTROMETER (ELECTROSPRAY IONIZATION)

### **BIO BANK AT PCMD**





### **PILOT PLANT**



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

### UPLC



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





## **BIOTECHNOLOGY DIVISION**



### PLANT BIOTECHNOLOGY DIVISION



### PLANT BIOTECHNOLOGY DIVISION



### **MOLECULAR BANK AT THE PCMD**



### **COMPOUND BANK AT THE PCMD**



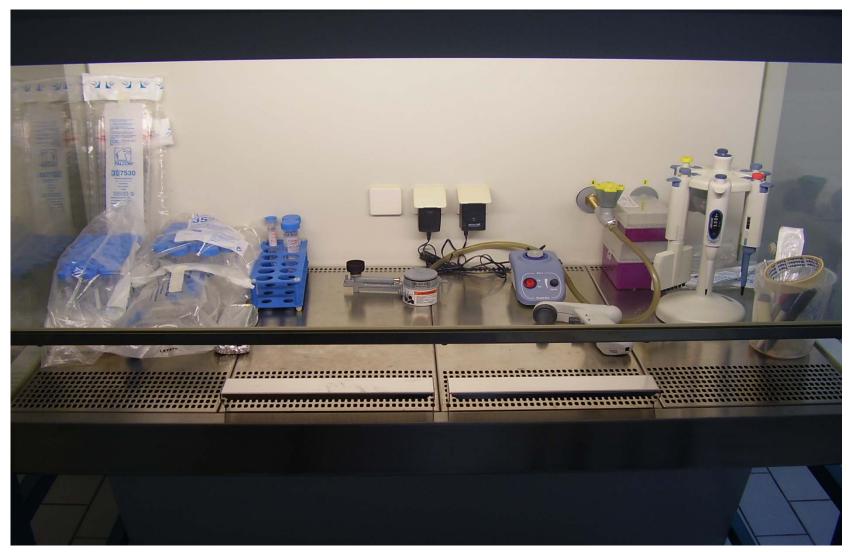
### **DIAGNOSTIC LABORATORY AT THE PCMD**



### PATCH CLAMP FACILITY AT PCMD



### **TISSUE CULTURE FACILITY AT THE PCMD**



### **CANCER CELL LINES AT PCMD**



### **FLORESCENCE MICROSCOPIC LABORATORY**



### **FATIONAL 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



# **Director ICCBS**, with French Delegates



# **Director ICCBS**, with French Delegates



## VISIT OF FACULTY FROM UNIVERSITY OF RHODE ISLAND

# X X X X

# IN HOUSE LIQUID NITROGEN SETUP



FLORESCENCE MICROSCOPIC LABORATORY (PCMD)





#### Pictures of some Germans students visited the institute

# ISO 17025, and 9001 : 2000 Certified Industrial Analytical Center (IAC) is serving over 350 industries in Pakistan

The Industrial Analytical Center (IAC) is a commercial entity, under the auspices of the H.E.J Research Institute of Chemistry. The IAC is offering a range of professional analytical and consultancy services to the industries and other private and public sector organizations.





**RESEARCH IN NANOPARTICLES** 



INAUGURATION OF JAMIL-UR-RAHMAN CENTER FOR GENOMIC RESEARCH

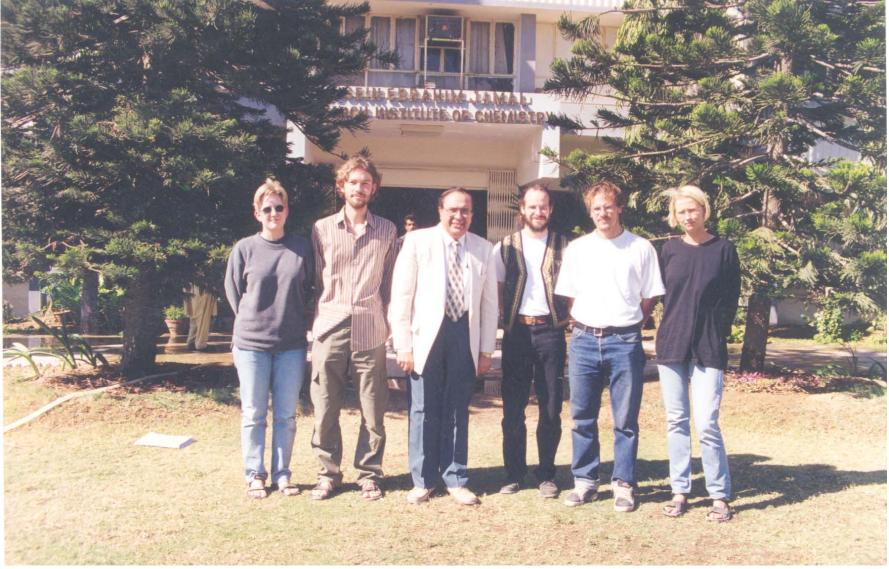
# The only institute which has received Islamic Development Bank (IDB) Prizes for Best Science Institution Twice (2004 and 2010)







## A GROUP OF GERMAN STUDENTS



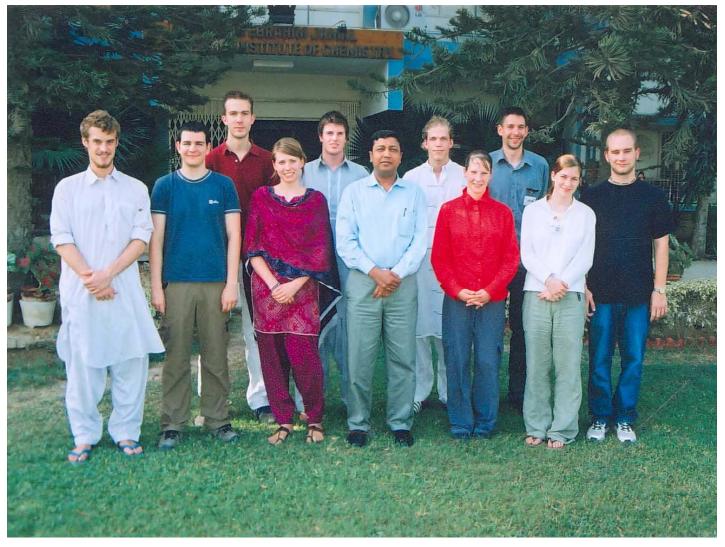
## **GERMAN STUDENTS ON TRAINING**



## FORIEGN FACULTY AND STUDENTS



# FORIEGN FACULTY AND STUDENTS



# **FORIEGN STUDENTS**



# **FORIEGN STUDENTS**



## **FORIEGN STUDENTS**



ICCBS Group Photograph, 2012





FEW STUDENTS OF ICCBS

