PCaPAC 2012

9th International Workshop on

Personal Computers and Particle Accelerator Controls

December 04-07, 2012

Workshop Guide & Abstract Booklet

Organised by
Variable Energy Cyclotron Centre
Department of Atomic Energy, Government of India
1/AF, Bidhan Nagar, Kolkata- 700 064

रतन कुमार सिन्हा
Ratan Kumar Sinha

भारत सरकार
Government of India

अध्यक्ष, परमाणु ऊर्जा आयोग
व
सचिव, परमाणु ऊर्जा विभाग
Chairman, Atomic Energy Commission
&
Secretary, Department of Atomic Energy

October 22, 2012

MESSAGE

It gives me great pleasure to note that the 9th *International Workshop on Personal Computers and Particle Accelerator Controls* (PCaPAC) is being organized by Variable Energy Cyclotron Centre (VECC), Kolkata during December 4-7, 2012. While the traditional focus of this series of workshops, on low cost control and data acquisition systems using PC technology, will continue to remain, PCaPAC – 2012 will also encompass other crucial and emerging aspects of particle accelerator control like verification-and-validation of control system design, recent trends in languages for control system design and latest trends in graphical user interfaces.

This workshop has been organized at an appropriate time when interest in particle accelerator physics and technology is at an all time high, worldwide. While we keep building more and more powerful and versatile particle accelerators, we also need to be adequately equipped to confront the challenges that the complex control systems of these sophisticated machines throw up before us. It is from this perspective that the importance of PCaPAC – 2012 is to be judged. The venue of the workshop is also very appropriate. VECC is home to a room temperature cyclotron, which has been running there for the last three-and-a-half decades. It is also home to a superconducting cyclotron and a facility for acceleration of radioactive ion beam. VECC is also deeply involved in the setting up of a medical cyclotron in Kolkata. VECC's involvement in building and running particle accelerators for over three decades makes it a good venue for holding Workshop on PCaPAC – 2012.

I am sure that the deliberations during the course of the workshop will satiate each and every delegate. I wish the workshop all success!

(R.K. Sinha)
Secretary

अनुशक्तिनगर, छत्रपति शिवाजी महाराज मार्ग, मुंबई - ४०० ०९४, भारत
दूरध्वनि : +(91) (22) 2202 2543 • फैक्स : +(91) (22) 2204 8476 / 2284 3888 • ग्राम : एटमीरे
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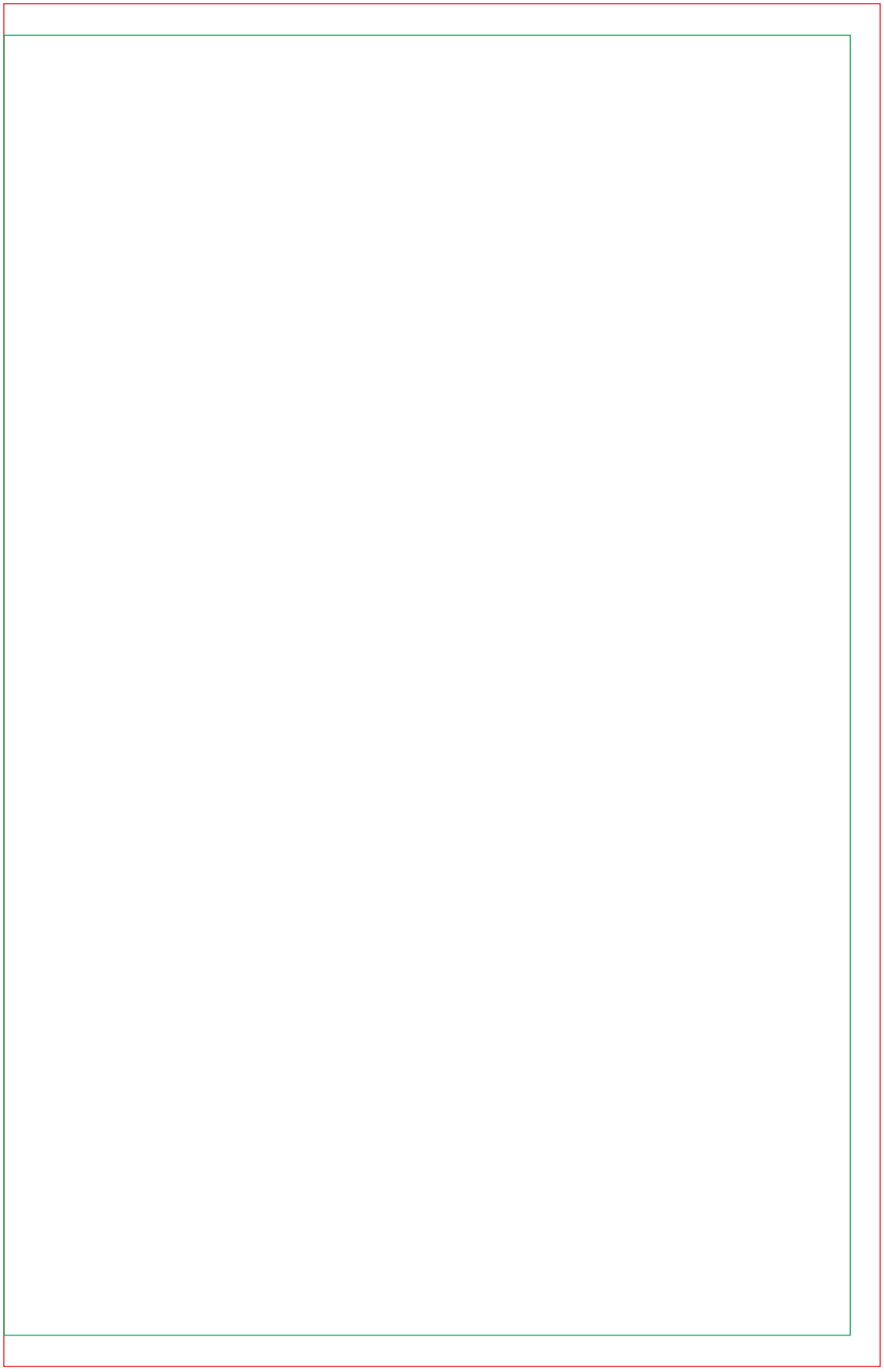

डी. डी. के. श्रीवास्तव
निदेशक
Dr. D. K. Srivastava
Director

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
VARIABLE ENERGY CYCLOTRON CENTRE

भारत सरकार
परमाणु ऊर्जा विभाग
परिवर्ती ऊर्जा साइक्लोट्रॉन केन्द्र

November 5, 2012

Message

I am indeed very happy to note that the Computer & Informatics Group of Variable Energy Cyclotron Centre (VECC) is organizing a four day Workshop on Personal Computers and Particle Accelerator Controls (PCaPAC 2012) at this Centre. It is my great pleasure and honour to welcome all the participants to VECC on the eve of this international event.

VECC has maintained a very close association with the PCaPAC series of workshops from the beginning and now it has got the coveted opportunity to host this event for the first time in India. It is truly a matter of pride for us and I extend my heartiest thanks to the international particle accelerator control community for choosing VECC to organize the ninth edition of this international workshop.

VECC is a pioneer institute in the field of accelerator programme of India with a notable distinction of operating its Variable Energy Cyclotron for over three & half decades. Now it is on the verge of extracting accelerated beam from the indigenously developed Superconducting Cyclotron. We have always been interested and engaged, therefore, in applying latest techniques of control system in both of our cyclotrons.

This workshop is being organized at a very important time when the world's largest particle accelerator (LHC) has started producing the long awaited results and when the techniques of accelerator control are also going through rapid changes with the advent of new hardware and software technology to cope up with the need of controlling the bigger machine.

I do sincerely hope that this workshop will provide a platform to take account of the latest developments from the accelerator control specialists and a good opportunity to the young participants to get acquainted with the frontline areas of accelerator control technology.

On behalf of all of us at VECC, I wish you all a successful event and a pleasant stay in the beautiful city of Kolkata, the cultural capital of India.

D. K. Srivastava
5/11
(D. K. Srivastava)

सेक्टर : 1, ब्लॉक : AF, बिधान नगर, कोलकाता- 700 064, भारत
दूरभाष : 2334-5125 (सीधा), 2359-0488 (सीधा), फैक्स : +(91) (033) 2334-6871/1110
SECTOR-1, BLOCK-AF, BIDHAN NAGAR, KOLKATA-700 064, INDIA
Phone : 2334-5125 (Direct), 2359 0488 (Direct), Fax : +(91) (033) 2334-6871/1110, E-mail : dkssh@vecc.gov.in

GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY
VARIABLE ENERGY CYCLOTRON CENTRE

Dr. D. SARKAR
Outstanding Scientist
Head, Computer & Informatics Group
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Ref: VECC/DS/

October 18, 2012

Message

It gives me great pleasure to note that the ninth biennial International Workshop on Personal Computers and Particle Accelerators Controls (PCaPAC-2012) is going to be held at Variable Energy Cyclotron Centre, Kolkata, India during December 04 to 07, 2012.

This Centre had developed a Variable Energy Cyclotron in 70's and has been operating this machine till date with modernised control system alongwith other subsystems. This Cyclotron is being used for nuclear physics experiments, material science studies, isotope production and other studies. A superconducting cyclotron with a very sophisticated control system has been giving internal beam of different species. We are also coming up with an ambitious project of building a national facility for rare ion-beams.

At this point of time and space, it is appropriate to welcome the experts of international repute in the field of control system from all over the world in the Variable Energy Cyclotron Centre at Kolkata, the city of joy and also the city of cyclotrons. This is the city where Prof. Meghnad Saha had built the first cyclotron in India.

I am sure that the PCaPAC, to be held in India for the first time, would not only benefit the young participants from India but all the participants across the globe would be benefitted from the mutual exchange of ideas among the experts.

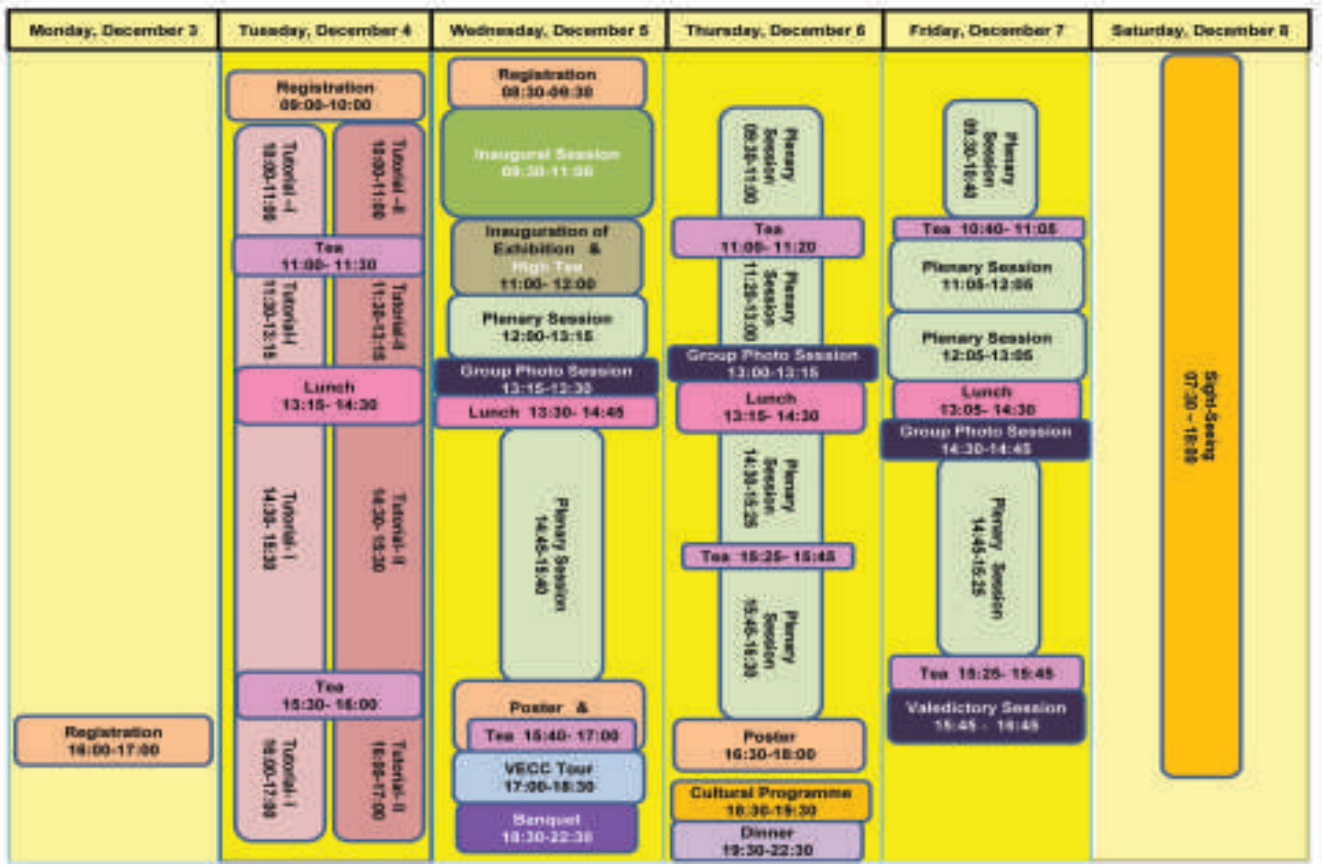
I wish the event a grand success.

18/10/12

(D. Sarkar)
Chair, PCaPAC-2012

SECTOR - 1, BLOCK-AF, BIDHAN NAGAR, KOLKATA - 700 064, INDIA
Tel. : (Direct) 2337 1230 (4 Lines), Fax : +(91) (033) 2334-6871
Web : www.vecc.gov.in, e-mail : <user-id>@vecc.gov.in

Workshop Overview



Workshop Guide

Contents

Abbreviations

ANL :	Argonne National Laboratory
APS :	Advanced Photon Source
BARC :	Bhabha Atomic Research Centre
BESSY :	Berlin Electron Storage Ring Society for Synchrotron Radiation
BNL :	Brookhaven National Laboratory
CELLS :	Consortium for the Exploitation of the Synchrotron Light Laboratory
CLS :	Canadian Light Source
DESY :	Deutsches Elektronen-Synchrotron
ECIL :	Electronics Corporation of India Limited
GSI :	Gesellschaft für Schwerionenforschung
HZB :	Helmholtz-Zentrum Berlin
IGCAR :	Indira Gandhi Centre for Atomic Research
IHEP :	Institute of High Energy Physics
IIT-KGP :	Indian Institute of Technology, Kharagpur
INFN :	Istituto Nazionale di Fisica Nucleare
IUAC :	Inter University Accelerator Centre
JSI :	Jozef Stefan Institute
KEK :	Kō Enerugî Kaskōi Kenkyû Kikō (The High Energy Accelerator Research Organization)
KIT :	Karlsruhe Institute of Technology
NPCIL :	Nuclear Power Corporation of India Limited
PEFP :	Proton Engineering Frontier Project
RRCAT :	Raja Ramanna Centre for Advanced Technology
VECC :	Variable Energy Cyclotron Centre

About the PCaPAC Workshop Series

The biennial series of International workshops on Personal Computers and Particle Accelerator Controls (PCaPAC) has traditionally focused on low cost control and data acquisition systems of particle accelerators using PC technology. PCaPAC also encomposses emerging technologies like the Web, GUI, middleware, FPGAs, embedded systems and use of commercial off-the-shelf systems and modern rapid development environments. This workshop provides a platform to the engineers/scientists to apprise themselves of the latest trends and techniques in control technology.

This workshop usually includes tutorials on selected topics of modern control technologies, along with invited and contributed oral presentations, as well as poster presentations. PCaPAC started its journey in 1996 at DESY in Germany and subsequently it was hosted by different accelerator laboratories across the globe as mentioned below.

- 2010 Saskatoon, Canada – (CLS)
- 2008 Ljubljana, Slovenia – (Cosy Labs and JSI)
- 2006 Newport News, USA – (Jefferson Lab)
- 2005 Hayama, Japan – (KEK and SOKENDI)
- 2002 Frascati, Italy – (INFN)
- 2000 Hamburg, Germany – (DESY)
- 1999 Tsukuba, Japan – (KEK)
- 1996 Hamburg, Germany – (DESY)

The Host City: Kolkata

The host city, Kolkata (formerly known as Calcutta), is the capital of the Indian state of West Bengal. Located on the east bank of the river Hooghly, it is the principal commercial, cultural, and educational centre of East India. Gobindapur, Kalikata and Sutanuti were the three villages that were merged to form the city by the British East India Company in the late 17th century. Kolkata served as the capital of India until 1911, which was later shifted to New Delhi. As of 2011, the city had 4.5 million residents, making it the third-most populous metropolitan city in India. Kolkata has been called "City of furious creative energy" as well as "Cultural capital of India". Kolkata is the birthplace of modern Indian literary, artistic and scholastic thought. And also Kolkata is the city where Prof. Meghnad Saha, the renowned Indian Astrophysicist, built the first cyclotron in India.

Weather

The weather in December is fairly pleasant with clear skies and cool winds. The average temperature ranges between 10°C to 30°C, which makes it one of the best months to enjoy local sightseeing and outdoor activities.

The Host Institute: Variable Energy Cyclotron Centre

Variable Energy Cyclotron Centre, located at Bidhan Nagar in Kolkata, is a premier R & D unit of the Department of Atomic Energy, Government of India. It is one of the constituent institutions of Homi Bhabha National Institute, a deemed-to-be university. This Centre is dedicated to carry out frontier research and development in the fields of Accelerator Science & Technology, Nuclear Science (Theoretical and Experimental), Material Science, Computer Science & Technology and in other relevant areas.

This Centre is home to a Variable Energy Cyclotron, which is operational since 1980. It was indigenously built in early 1970s. It has since been utilized by user-groups from all over the country and outside, primarily for research and development in the fields of nuclear physics, nuclear chemistry, radiation biology and material science. A Superconducting Cyclotron is being constructed to make a quantum jump in the accelerated particle energies for frontline experiments. Construction of this cyclotron has resulted in enormous technological fall-outs, particularly in the fields of superconducting magnet and cryogenics. This Centre is also constructing a Radioactive Ion Beam facility for modern nuclear physics and nuclear astrophysics experiments. This Centre is also actively involved in the setting up of a medical cyclotron at Kolkata. Scientists of this Centre have made a substantial contribution in experimental and theoretical research, in the field of Quark Gluon Plasma, in the international arena.

The Centre has also developed high-performance computing facilities to cater to the computational and storage requirements for sustaining frontline research and development. Facility also exists for the development of systems for data-acquisition from experiments with the cyclotrons as well as control of the cyclotrons. This Centre is also involved in the development of technologies having immediate social benefits.

Exploration and recovery of helium gas from hot spring emanations, and earthquake prediction utilizing related observations, is another important area in which the Centre is actively engaged.

International Advisory Committee

Bacher Reinhard - DESY (Germany)
Baer Ralph - GSI (Germany)
Bhandari Rakesh Kumar- VECC (India)
Catani Luciano - INFN (Italy)
Chevtsov Pavel - Jefferson Labs (US)
Chunhong Wang - IHEP (China)
Clausen Matthias - DESY (Germany)
Duval Philip - DESY (Germany)
Farnsworth Richard- ANL (US)
Gupta P. D. - RRCAT (India)
Gurd Dave - Oak Ridge (retired)(US)
Heron Mark - Diamond (UK)
Hunt Steve - Alceli (Switzerland)
Kamikubota Norihiko - KEK (Japan)
Klora Jorg - CELLS (Spain)
Kosuge Takashi - KEK (Japan)
Kurokawa Shin-ichi - Cosy Lab (Japan)
Lange Ralph - HZB / BESSY II (Germany)
Matias Elder - CLS (Canada)
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Mexner Wolfgang - KIT (Germany)
Plesko Mark - JSI (Slovenia)
Quock Deborah - APS (US)
Roy Amit - IUAC (India)
Sinha R. K. - BARC (India)
Shen Guobao - BNL (US)
Song Young-gi - PEFP (Korea)
Verstovsek Igor - Cosy Lab (Slovenia)
Yamashita Akihiro - Spring 8 (Japan)

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Chandra Umesh - NPCIL
Majumdar A. K. - IIT-KGP
Navathe C. P. - RRCAT
Pithawa C. K. - BARC
Sarkar Debranjan - VECC
Satya Murty S. A. V. - IGCAR

Local Organising Committee

Bhattacharjee Tanushyam
Bhattacharyya Tamal
Bhole R. B. (Treasurer)
Chaddha Niraj
Datta Kaushik
Fatnani Pravin- RRCAT
Mandal Aditya
Nabhiraj P. Y.
Pal Sandip
Pal Sarbajit (Secretary)
Roy Anindya
Samanta Tapas
Sarkar Debranjan (Chairman)

Scientific and Technical Programme Details

Pre-Workshop Tutorials

Tuesday, December 04, 2012

Tutorial-I
Venue: Conference Room, Silver Jubilee Guest House

Topic: EPICS & CSS tutorial seminar and hands-on

Speaker: Norihiko Kamikubota- *High Energy Accelerator Research Organization, Japan*

10:00	Tutorial
11.00	**Tea Break**
11:30	Tutorial Continued
13.15	**Lunch**
14:30	Tutorial Continued
15.30	**Tea Break**
16:00	Tutorial Continued

Tutorial-II
Venue: Ajay Divatia Lecture Hall

Topic: Programming EPICS enabled Real-Time and FPGA

Speaker: Arun Veeramani - *National Instruments*

10:00	Tutorial
11.00	**Tea Break**
11:30	Tutorial Continued
13.15	**Lunch**
14:30	Tutorial Continued
15.30	**Tea Break**
16:00	Tutorial Continued

Workshop Programme

December 05, 2012 – PCaPAC-2012

Venue: VECC/SINP Campus Auditorium Main Lecture Hall

09:30	Welcome Address – Ranadhir Dey, Head, CPIES Group, VECC
09:40	About the Workshop – Debranjan Sarkar, Chairman, PCaPAC-2012
09:50	Keynote Address – Matthias R. Clausen- DESY, Germany
10:20	Keynote Address – Y S Mayya- BARC, India
10:50	Vote of Thanks – Sarbajit Pal, Secretary, PCaPAC-2012
11:00	**Inauguration of Exhibition and High Tea**
12:00	Implementation of Control Systems for Cyclotrons at VECC: A Status Report, Sarbajit Pal – VECC, India
12:25	Review of Control Resources for J-PARC Accelerators, Norihiko Kamikubota – KEK, Japan
12:50	Indus-2 Control System: A Closer Perspective, Pravin Fatnani – RRCAT, India
13:15	Group Photo
13:30	**Lunch**
14:45	Web2cToGo: Bringing the Web2cToolkit to Mobile Devices, Reinhard Bacher – DESY, Germany
15:10	EPICS Channel Access Using WebSocket , Akito Uchiyama - Sokendai, Japan
15:25	Qt Based GUI System for EPICS Control Systems , Ricardo Nogueira Fernandes – Australian Synchrotron Company, Australia
15:40	Poster & Tea
17:00	VECC Visit
18:30	**Banquet**

December 06, 2012 – PCaPAC-2012

Venue: VECC/SINP Campus Auditorium Main Lecture Hall

09:30	Trombay Programmable Logic Controller TPLC-32, Uday W. Vaidya – BARC, India
09:55	Current Status and Upgrade Plan of the Data-Acquisition System in SACLA , Takashi Sugimoto – JASRI, Japan
10:20	The IUAC Tandem-LINAC Control System , Ajith Kumar – IUAC, India
10:45	An Update on ConSys Including a New LabVIEW FPGA Based LLRF System, Torben Worm – ISA, Denmark
11:00	**Tea**
11:20	PLC-based Control System for 10 MeV Linear Accelerator at EBC Kharghar, BARC , Alka S Chachondia -BARC, India
11:35	Status of the Ultra Fast Tomography Experiments Control at ANKA , David Haas – KIT, Germany
11:50	HyperArchiver: an Evolution of EPICS Channel Archiver , María del Campo - ESS Bilbao Consortium, Spain
12:05	EPICS MySQLArchiver - Integration Between EPICS and MySQL , Anindya Roy – VECC, India
12:20	Using Memcached as Real-time Database in the SPARC Control System, Giampiero Di Pirro - INFN, Italy
12:35	Control System Interoperability, an Extreme Case: Merging DOOCS and TINE , Philip Duval – DESY, Germany
13:00	Group Photo
13:15	**Lunch**
14:30	Tango for Experiment Control, Jens Meyer – ESRF, France
14:55	Controls Architecture for the Diagnostic Devices at the European XFEL,Olaf Hensler – DESY, Germany
15:10	PC Based Real Time Data Exchange on 10GbE Optical Network Using RTOS,Rajeev Prasad Gupta – IPR, India

15:25	**Tea**
15:45	Master Slave Topology Based, Remotely Operated, Precision X-ray Beam Profiler and Placement System for High Pressure Physics Experiment at Indus-2 Beam Line, Harilal Savadas Vora – RRCAT, India
16:00	A Flexible and Testable Software Architecture: Applying Presenter First to a Device Server for the DOOCS Accelerator Control System of the European XFEL,Andreas Beckmann - European XFEL, Germany
16:15	Design Development and Analysis of a Comprehensive Open Source System for Proactive Management of Security Aspects of a Control Network,Shailendra Singh Tomar -RRCAT, India
16:30	Poster
18:30	**Cultural Programme**
19:30	**Dinner**

December 07, 2012 – PCaPAC-2012

Venue: VECC/SINP Campus Auditorium Main Lecture Hall

09:30	The New White Rabbit Based Timing System for the FAIR Facility , Dietrich Hans Beck – GSI, Germany
09:55	Status Report and Maintenance Issues of VME Based Cryogenic Control System at IUAC Joby Antony – IUAC, India
10:10	Development of a Car-borne Survey System KURAMA, Minoru Tanigaki – KUR, Japan
10:25	Control System for BARC-TIFR Pelletron, Sudheer Singh – BARC, India
10:40	**Tea**
11:05	Maintaining an Effective and Efficient Control System for the Electromagnetic Calorimeter of the Compact Muon Solenoid Experiment During Long-term CERN Large Hadron Collider Operations, Oliver Holme - ETH Zurich IPP, Switzerland

11:20	Development of the Control System for PEFP 100-MeV Proton Linear Accelerator, Young-Gi Song – KAERI, Korea
11:35	RF Control System for 400 keV RFQ, Sandeep Kashinath Bharade – BARC, India
11:50	VEPP-2000 Collider Control System, Alexander Senchenko – BINP, Russia
12:05	Design of the Data Acquisition System for the Nuclear Physics Experiments at VECC, Partha Dhara – VECC, India
12:20	A FPGA Based High Speed Data Acquisition Card, Jaydeep Ashok Gore – BARC, India
12:35	Development and Performance Analysis of EPICS Channel Access Server on FPGA based Soft-core Processor, Shantonu Sahoo – VECC, India
12:50	Digital Pulse Processing Techniques for High Resolution Amplitude Measurement of Radiation Detector, Payal Singhai – VECC, India
13:05	**Lunch**
14:30	Group Photo

Venue: Ajay Devatia Lecture Hall

14:45	Introducing the !CHAOS Control Systems Framework, Luciano Catani – INFN, Italy
15:10	Process Control for Parallel Run of Two Helium Liquefiers at VEC Centre, Kolkata, Sandip Pal – VECC, Kolkata
15:25	**Tea**
15:45	Valedictory session

Programme Tracks

The scientific programme is divided into 11 tracks as described below:

1 - Status Reports/ Overview of Control System: The session on status reports presents an overview of new or upgraded experimental physics facilities with a control system perspective. Reports typically cover the early stages of a project within the time frame from the conceptual proposal to that of being recently commissioned. Presentations include descriptions of the most challenging issues of the facility.

2 - Control System Interoperability: The development towards interoperability of accelerator control systems are often required, and merging of control systems like EPICS, TINE, DOOCS are common, to run large facilities. This track covers all aspects of the control system interoperability including hardware, software and support.

3 - Verification and Validation of Control System Design: Verification and validation is an integral part of control system design. This track covers all aspects of the V&V with respect to producing quality control systems including hardware, software and support.

4 - Data Integrity and Security : Huge volume of data transaction is required in a control system and hence integrity and security aspects of data are very important. This session covers all aspects of data integrity and security from the perspective of design of control system.

5 - New Trends in Languages for Control System Design : Choice of programming languages in developing control system is equally important like other aspects. This track covers the recent choices and its reason of selecting such languages in designing control system.

6 - Experimental Data Acquisition: This track covers all aspects of design and development of data acquisition systems used in various experiments with acclerated beams.

7 - Control Databases: This track covers the design, development and choice of control databases used in the control system. Historical trending, interfacing with the control parameters, saving and restoring methodologies are covered in this session.

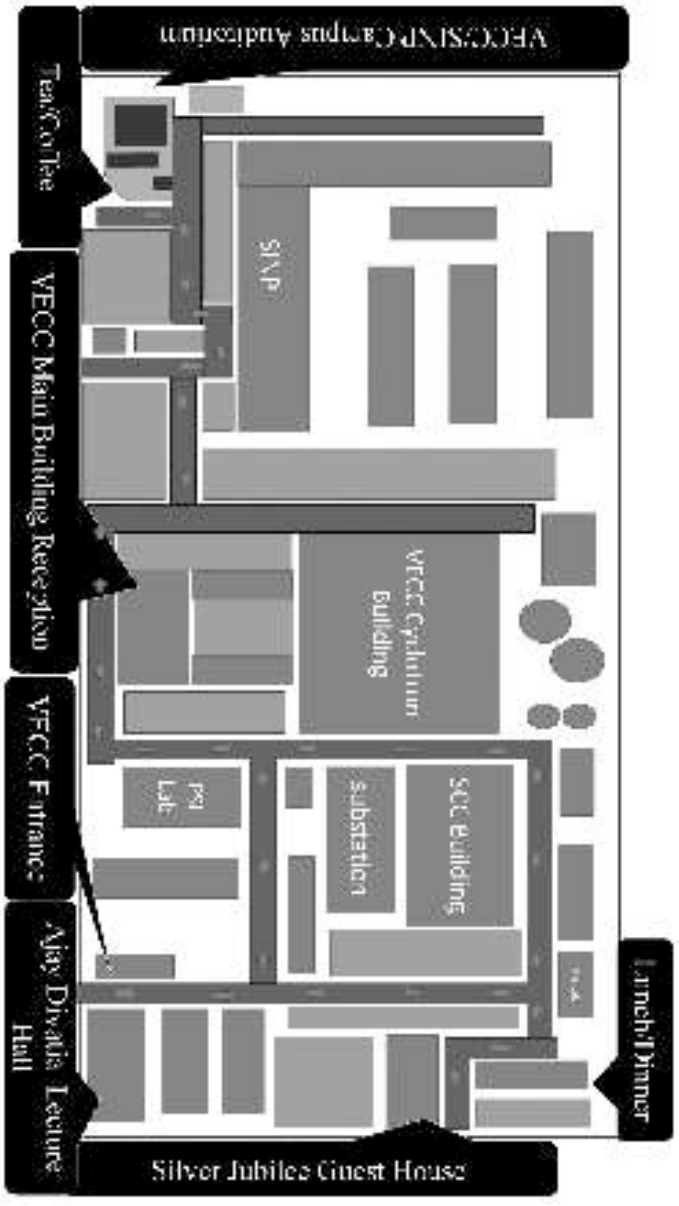
8 - PC vs Embedded System: Embedded systems have taken an important role in the control system design and hence, the importance of comparison with the PC-based technology for designing control system is paramount. This track covers all aspects of using embedded systems in control system design.

9 - Software and Hardware Technologies: This session presents details of designing control systems from the perspective of the software and hardware technologies required to build them. This includes new methods in software engineering as well as new technology for hardware developments, including products that can be used in controls.

10 - Open Source Software for Control: Open source software for developing control system always gets an edge over proprietary software for many reasons. This track covers all aspects of open source software for designing control system.

11 - Latest Trends in GUI: Graphical User Interface (GUI) is an integral part of the control system package. This track covers the latest trends in designing graphical interfaces to access the control system from operator's console.

VECC-SINP Campus Map



Important Information

Arriving by Air

Kolkata is well connected to different cities of India and abroad through **Netaji Subash Chandra Bose International Airport.**

Nearest Landmark of VECC: Calcutta Armed Police Camp (CAP camp) near Tank No. 5 at Salt Lake (alternate name: Bidhan Nagar)

Route: Airport-Ultadanga-Salt Lake (12 Km)

Alternate Route: Airport-New Town-Salt Lake (18 Km)

(This route is likely to have less traffic congestion during the day time)

One can avail pre-paid taxi from the airport lounge to respective destinations of stay. Pre-paid rates are available at the pre-paid counter. Please check the rates for different destinations before booking.

Please mention destination as "Tank Number 5" or "CAP Camp" at the prepaid counter for VECC.

Note: *Participants who have booked their accommodations in the PCaPAC-2012 recommended hotels may get airport transfer facility from their respective hotels. So, they are requested to contact and coordinate with the hotels in this regard.*

Arriving by Rail

Kolkata is well connected to different cities of India by rail route through **Howrah and Sealdah Railway Stations**.

Nearest Landmark of VECC: Calcutta Armed Police Camp (CAP camp) near Tank No. 5 at Salt Lake (alternate name: Bidhan Nagar)

Route: Howrah Station-Ultadanga-Salt Lake (13 Km)
Sealdah Station-Ultadanga-Salt Lake (8 Km)

Pre-paid taxis are available outside the railway stations.

Accommodation

Accommodations for the participants have been arranged at many Government Guest Houses along with VECC Guest House. A few hotels in and around the Venue are also arranged by the PCaPAC-2012 organising committee.

Government Guest Houses

VECC Guest House
Location: Inside VECC Campus
1/AF, Bidhan Nagar, Kolkata - 700 064
Tel: +91 33 2318 4425/4605
Airport: 12 Km

Indian Institutes of Science Education and Research (IISER) Guest House
Location : Beside City Centre-I, Saltlake, Kolkata- 700 064
Tel: +91 33 23376771
Fax: +91 33 23347425
Airport : 13 Km
VECC : 2 Km

Regional Remote Sensing Service Centres (RRSSC) Indian Space Research Organisation (ISRO) Guest House
Location : Near Axis Mall/ Home Town Mall
New Town, Rajarhat, Kolkata - 700 156
Tel: +91 33 27062543
Website : http://www.isro.org/isrocentres/rrssc.aspx
Airport : 12 Km
VECC : 6 Km

Society for Applied Microwave Electronics Engineering and Research (SAMEER) Guest House
Location: JC-30, Salt Lake, Kolkata - 700 098
(Near Salt Lake Stadium)
Tel : +91 33 23356219
Airport : 13 Km
VECC : 6 Km

Hotels

The Pride

Location: Near Axis Mall, B. G-12
Action Area 1-B, New Town, Rajarhat, Kolkata-700 156
Tel : + 91 33 4025 9999
Fax : +91 22 4025 9900
E-mail: salesmgr.kolkata@pridehotel.com
Website:http://www.pridehotel.com/kolkatahotels/ index.aspx
Airport: 12 Km
VECC: 6 Km

The Sonnet

Location: Near City Centre, Saltlake
Block: DD, Plot-08, Sector-1, Salt Lake, Kolkata-700 064.
Tel: + 91 33 6633 9000
Fax : +91 22 6633 9001
E-mail: reservations.kol@thesonnet.com
Website: http://www.thesonnet.com/kolkata/index.php
Airport: 13 Km
VECC: 2 Km

Kenilworth Hotel

Location : 1 & 2, Little Russel Street, Kolkata 700 071,
Tel: +91 33 2282 3939/2282 3940/6621 4100
Fax: + 91 33 2282 5136
Email: reservationakol@kenilworthhotels.com
Website: http://www.kenilworthhotels.com/kolkata/
Airport : 19 Km
VECC : 11 Km

Please note that the accommodation charges are to be paid by the participants to their respective hotels/guest houses. Organisers will arrange for transport from PCaPAC-2012 recommended hotels to VECC (Workshop Venue) and back on each day of workshop. It may not be possible to extend the transport facility for the participants staying at hotels other than the PCaPAC-2012 recommended ones.

Registration Desk/Help Desk

Registration Desk

Monday, December 03, 2012
Venue: Ground Floor of Silver Jubilee Guest House, VECC
Time: 16:00 hrs – 17:00 hrs

Tuesday, December 04, 2012
Venue: Adjacent to Ajay Divatia Lecture Hall
Time: 09:00 hrs – 10:00 hrs

Wednesday, December 05, 2012
Venue: VECC/SINP Campus Auditorium Reception at Ground Floor
Time: 08:30 hrs – 09:30 hrs

Help Desk

Wednesday, December 05, 2012 - Friday, December 07, 2012
Venue: VECC/SINP Campus Auditorium Reception at Ground Floor
Time: 08:30 hrs – 17:30 hrs

Lunch

Lunch will be provided by the organisers to all the registered participants of the workshop during December 04-07, 2012 at workshop venue.

Following are some recommended restaurants in and around Salt Lake where participants may visit.

6 Ballygunge Place
Traditional Bengali cuisine
DD 31 A, Sector 1, Salt Lake, Kolkata
Tel: +9133 2337 2120

Silver Chimney
Bengali, Chinese & North Indian cuisine
BF-97, Sector-1, Salt Lake, Kolkata
Tel: +9133 2321 3352/ 4060 7029
+91 9830327005

Haveli
Traditional Veg. North Indian Cuisine
CK-2, Sector-2, Saltlake, Kolkata
Tel: +91 33 2359 7627

McDonald's
Non-Veg,Burgers, Fast Food Restaurant
City Centre-II, Rajarhat, New Town, Kolkata
Tel: +91 33 2526 6468/6600 0666

Pizza Hut, Salt Lake
Shop No.-A105, 1st Floor, DC-1
City Centre, Sector-1
Salt Lake, Kolkata
Tel:+91 33 2358 0984

Hangout
Multi-cuisine food court, Salt Lake City Centre
Shop No.-A301, 3rd Floor, DC-1, Salt Lake, Kolkata
Tel: +91 33 2358 3936/2358 3194

Banquet

Venue: "Eco Hub Conclave"

Date & Time: Wednesday, December 05, 18:30 hrs - 22:30 hrs

Transport arrangement will be made for the participants to reach the banquet venue from the workshop venue and return to their respective PCaPAC-2012 recommended hotels and Guest Houses.

An instrumental duet featuring the Sitar and the Indian bamboo Flute will be staged on the evening.

Dinner

Venue: "VECC Guest House"

Date & Time: Thursday, December 06, 19:30 hrs - 22:30 hrs

Dinner on Thursday will be hosted by Director, VECC.

Transport arrangement will be made for the participants to return to their respective PCaPAC-2012 recommended hotels and Guest Houses at 22:30 hrs.

Market & Shopping Places

Following are some recommended market places and shopping malls in and around Salt Lake where participants may visit.

Participants are advised to check about the acceptance of payment through credit card before purchase.

City Centre, Salt Lake
Shopping Mall, Block – DC, Sector 1
Salt Lake City, Kolkata – 700 064

Uttarapan
Shopping complex specialized in state handlooms
1/16, VIP Road, Ultadanga, Kolkata - 700 054

Manjusha
(Also in Uttrapan)
West Bengal Handicrafts Development Corporation Ltd
IB-181, Sector – 3, Salt Lake City, Kolkata – 700 091

Mani Square Mall
Shopping Mall, 164/1, Maniktala Main Road
Kolkata - 700 064

Tantuja
West Bengal Handloom
18/4, Tantuja Bhawan
Block-DD, Sector-1
Near City Centre, Salt Lake, Kolkata- 700 064

Important Telephone Nos.

Local Organising Committee

1] Debranjan Sarkar, Chairman, PCaPAC-2012
Office: +91 33 2318 2219/2337 0332
Extn: 2219
Res: +91 33 2359 7840
Cell: +91 8961035725

2] Sarbajit Pal, Secretary, PCaPAC-2012
Office: +91 33 2318 2305
Extn: 2305
Res: +91 33 2334 3095
Cell: +91 9433043095

3] R. B. Bhole, Treasurer, PCaPAC-2012
Office: +91 33 2318 2304
Extn: 2304
Cell: +91 9433056810

4] Niraj Chadda (For Accommodation)
Office: +91 33 2318 2304
Extn: 2304
Cell: +91 9433773576

5] Shantonu Sahoo (For Transport)
Office: +91 33 2318 2300
Extn: 2300
Cell: +91 9051368616

VECC Security

1] Gate-1 Office
Phone :+91 33 2318 4300/4301
Extn: 4300/01

Air Lines

1] **Netaji Subash Chandra Bose International Airport**
General Enquiry: +91 33 2511 8787

2] **Air India**
Toll free enquiry: 1800-180-1407
City Office: +91 33 2211 6869/0041

Railways

1] **Reservation:** 139

2] **Howrah Station**
Old Complex: +91 33 2638 7412/3542/2581
New Complex: +91 33 2638 2217

3] **Sealdah Station**: +91 33 2350 3535/3537

Bidhan Nagar City Police

1] For Emergency: 100
2] Control Room: +91 33 2321 2358 /4062 1111/
4063 1111/4065 1111/4064 1111

West Bengal Tourism

1] Tourism Centre (Kolkata): +91 33 2248 5168/8271/8272,
+91 33 2243 7260

Corporate Exhibition

Venue: VECC/SINP Campus Auditorium (First Floor)

Inauguration Date & Time:
December 05, Wednesday, 11:00 hrs

Exhibition Date: December 05-06, 2012

Stall -1: Electronics Corporation of India Limited
Stall -2: National Instruments
Stall -3: Micro System Foundations
Stall -4: Tektronix (India) Pvt Ltd

Programme Codes

The date, type, place and time of the oral and poster presentations can easily be identified from the programme code.
Programme Code Format: **DDTS**##

- First two letters (DD) indicate the day of the week.
  - TU (Tuesday),WE(Wednesday),TH (Thursday), FR (Friday)
- The third letter (T) indicates the type of presentation.
  - K: Keynote Address (30 minutes)
  - I: Invited Oral (25 minutes)
  - C: Contributed Oral (15 minutes)
  - P: Poster
- The fourth letter (S) indicates the session of the day for presentation.
  - A: First Session
  - B: Second Session
  - C: Third Session
  - D: Fourth Session
- Finally last two characters (##) indicate the sequence number of the presentation within the session.

Example:

1] **WEKA01:** Wednesday (WE), First (01) Keynote Address (K) in first session(A).

2] **FRCB06:** Friday (FR), Sixth (06) Contributed Oral (C) in the second session (B).

3] **WEIC01:** Wednesday (WE), First (01) Invited Oral (I) in third session (C).

4] **THPD08:** Thursday (TH), Eighth (08) Poster Presentation (P).

Pre-Workshop Tutorials

Two Pre-Workshop tutorials are organized in parallel on Tuesday, December 04, 2012

Tutorial- I

Topic: ***EPICS & CSS seminar and hands-on***

Venue: Conference Room, Silver Jubilee Guest House

Date & Time: Tuesday, December 04, 2012, 10:00 hrs -17:30 hrs

Organised by: Norihiko Kamikubota (KEK, Japan)

Brief Description: In this tutorial, one day hands-on training will be given on EPICS and CSS, the toolkits for accelerator control. Introductory presentations, followed by practical sessions, will be conducted to teach different components of these toolkits and how to configure and use them to develop accelerator control systems.

Tutorial- II

Topic: ***Programming EPICS enabled Real-Time and FPGA Systems***

Venue: Ajay Divatia Lecture Hall, VECC

Date & Time: Tuesday, December 04, 2012, 10:00 hrs -17:30 hrs

Organised by: Arun Veeramani (National Instruments)

Brief Description: Over the years, the use of commercial-off-the-shelf (COTS) technology has enabled scientists and researchers to focus on their experiments rather than the instrumentation. COTS systems that leverage the rapid advancement in the computer industry for deterministic measurement and control needs high performance and flexibility while keeping the costs low. Learn how to take advantage of the latest EPICS-enabled COTS technologies, including graphical programming, real-time operating systems and FPGA-based hardware, for measurement, diagnostic and control systems.

Note: *Participants are requested to carry their own laptop/notebook. However, a few laptops will be arranged by organizers of PCaPAC-2012.*

Oral Presentation

Speakers are requested to prepare their oral presentation file and submit it through JACoW SPMS File Upload options and also handover the electronic copy to the presentation coordinators (to be present inside the presentation hall) during the session previous to his/her scheduled session of presentation. If presentation file contains any video clip or requires any plug-in, speaker should check it with the presentation system with the help of presentation coordinators well before his/her speech.

Poster Presentation

Venue: VECC/SINP Campus Auditorium (First Floor)

Date &Time :

Day-I : Wednesday, December 05, 2012, 15:40 hrs – 17:00 hrs
Day-II: Thursday, December 06, 2012, 16:30 hrs – 18:00 hrs

The poster session is an essential and integral component of the PCaPAC workshop. Posters are not only a good substitute of the oral presentations but also a good opportunity for direct face to face interaction between the presenter and the viewer.

Instruction for Poster Display

The poster format is strictly A0 (Portrait). Participants are required to bring with them an A0 (Portrait) printed copy of their poster as no poster printers will be available at the workshop venue and also upload the Portable Document Format (PDF) file through JACoW SPMS File upload option.

The program code of the posters, indicating day of the presentation and sequence number, will be displayed on the poster frames. Participants are requested to mount their poster as per the programme code arranged by the organiser.

Time Schedule

The schedule for fixing and removing of posters is:

- For the Day-I (Wednesday, December 05, 2012) poster fixing will commence at 14:30 hrs on Wednesday, December 05, 2012 and has to be taken off by 12:00 hrs on Thursday, December 06, 2012.

- For the Day-II (Thursday, December 06, 2012) poster fixing will commence at 14:30 hrs on Thursday, December 06, 2012 and removing has to be over by 12:00 hrs on Friday, December 07, 2012.

  If participants want to get back their posters after the session, they should adhere to these timings. The organizers will have no liability of the custody of the posters beyond the stipulated timings.

Poster Publication

Since no contributions are accepted for publication only, any paper, accepted for poster presentation, will be excluded from the proceedings if it is not presented by one of the authors at the workshop.

Prize

The ***Isamu Abe Prize*** is awarded by PCaPAC to the competent scientists/engineers in recognition of their innovative ideas, achievements and applications in the field of accelerator controls and to encourage them in the early stages of their career. This prize is named in the respectful memory of Isamu Abe, one of the co-founders of PCaPAC from KEK, who suddenly passed away in June, 2002.

The name of the recipient(s) of this prize will be decided by the International Advisory Committee during PCaPAC-2012. In this edition of PCaPAC, cash award amounting to INR 60,000 will be given to the recipient(s).

VECC Tour

Visit to different facilities of VECC (Variable Energy Cyclotron, Super Conducting Cyclotron, Radioactive Ion Beam Facility etc.) has been arranged for the interested participants during 17:00 hrs - 18:30 hrs on December 05, 2012 in three groups. Formation of groups will be intimated during the workshop.

Participants are required to carry their workshop badge while visiting these facilities.

Workshop Cultural Programme

Venue: VECC/SINP Campus Auditorium

Date & Time : December 06, 2012, 18:30 hrs

Duration: 60 minutes

Traditional North Indian dance forms **Odissi** and **Kathak** by a troupe of professional performers:

Odissi, a classical dance form, originating in Orissa (now Odisha), is a solo/group performance, depicting stories from Indian mythology.

Kathak, dance recital (solo/group) is a dance form originating in the state of Uttar Pradesh. It depicts colourful stories from the Indian mythology and some pure dance forms contain vandana, tatkar, special bols, chakradar, sawal-jawab etc.

A duet recital of Kathak and Odissi showing a perfect amalgamation of two cultures.

Some popular form of dance with song on holi and other festival will be presented at the end.

Sightseeing

One day city tour and sightseeing in and around Kolkata will be arranged by the organising committee of PCaPAC- 2012 on Saturday, December 08, 2012. Interested participants are requested to register their names in Help Desk to avail this city tour. The tentative program is given below.

Starting Point:

07:30 VECC Main Gate
07:45 City Centre, Saltlake
(SONNET and IISER guests pickup point)
08:00 Pride Hotel/ Axis Mall
08:30 Jain Temple
09:30 Dakshineswar Kali Temple
10:30 Belur Math
12:00 Tagore House (Jorasanko) via Rabindra Setu

Sightseeing

	13:00 Nandan
Lunch Break :	**13:00 – 14:00**
	14:05 Victoria Memorial
	15:15 Eden Garden (Drive past)
	15:25 High Court (Drive past)
	15:35 Writer's Building (Drive past)
	15:45 Esplanade (Drive past)
	16:15 Science City (Drive past)
Terminating Point:	**18:00 VECC Main Gate**

Abstract Booklet