



12<sup>th</sup> NATIONAL SYMPOSIUM ON  
**FRONTIERS IN PHYSICS**  
Academic Program



**Wednesday 02<sup>nd</sup> February 2011**

**08:30 – 09:45      Registration**

**09:45 – 11:00      Inauguration**

**Chief Guest    Dr. Ansar Parvez    Chairman PAEC**

**Dr. Khalid Aftab, Vice Chancellor, GCUL will preside over the Ceremony**

**Inaugural Lecture**

**Prof. Dr. Riazuddin**

Dirac equation and its implications in physics and technology

**11:00 – 11:30      Tea break**

**Chairman –    Dr. Kamaluddin Ahmed**

11:30 – 12:00    Dr. Pervez Hoodbhoy                      The Practical Uses of Extra Space-Time Dimensions

12:00 – 12:30    Dr. M. Z. Iqbal                                The Solar Buzz - An Update on Photovoltaics

12:30- 13:00    Dr. Sabieh Anwar                            SPINS TAKE ON THE HEAT: The Emerging Field of Spin Caloritronics

**13:00 – 14:00      Lunch break**

**Time 14.00-15.30**

**Salam Session**

**Chairman – Dr. Khalid Aftab**

**Contributors**

Dr. G. Murtaza, Dr. Pervez Hoodbhoy, Dr. Riazuddin  
and Dr. Tariq Zaidi

**15:30 – 16:00      Tea break**

**Wednesday 02<sup>nd</sup> February 2011**

**Session II**

**Chairman – Dr. Asghar Qadir**

16:00 – 16:30	Dr. Fayyazuddin	Space-time Symmetries
16:30 – 17:00	Dr. Aamer Iqbal	Extended Seiberg-Witten Theory and Topological Strings
17:00 – 17:30	Dr. Jamil Aslam	Exotic States in Particle Physics

**17.30. 17.40 ----- To be announced later**

**Note:**

Posters will be on display for the entire duration of the Symposium. Participants may therefore visit them during tea & lunch breaks or in the evenings. Two Best Posters will be awarded Cash Prizes.

**Thursday 03<sup>rd</sup> February 2011 Parallel Sessions at Bokhari Auditorium**

**Chairman – Dr. Saadat A. Siddiqui**

09:30 – 10:00	Dr. Muhammad Hassan	Plasma radiation based materials processing
10.00 – 10.30	Dr. Riaz Ahmad	Deposition of zirconium using plasma device
10.30 – 11.00	Dr. M. Zakaullah	Plasmas Generation for Industrial Applications

**11:00 – 11:30 Tea Break**

**Session IV**

**Chairman – Dr. I. R. Durrani**

11:30 – 12:00	Dr. H. A. Shah	Quantum Plasmas and Nonlinear Effects
12:00 – 12:30	Dr. Hamid Saleem	Magnetic field and plasma flow are generated simultaneously by electrons and ions temperature and density gradients
12:30 – 13:00	Dr. G. Murtaza	Effect of Temperature Anisotropy on Various Modes and Instabilities for a Non-Relativistic Bi-Maxwellian Plasma

**13.00 – 14.00 Prayer/Lunch Break**

**Session V**

**Chairman – Dr. Badar Suleman**

14:00 – 14:30	Dr. Zahoor Ahmad	MHD Equilibrium and its Role in the Designing of Spherical Tokamak
14.30 – 15.00	Dr. Bilal Rasul	Plasma-Wall Interactions for the Investigation of Fusion Relevant Materials
15.00 – 15.30	Dr. Riaz Khan	GLAST: A conceptual design study of the first Spherical Tokamak Experiment in Pakistan

**15.30 – 16.00 Tea Break**

**Chairman – Dr. M. Zakaullah**

16.00 – 16.30	Dr. Mehboob Sadiq	The genesis of tokamak discharge
16.30 – 17.00	Dr. Jawad Younis	Auxiliary heating systems of tokamak
17.00 – 17.30	Dr. Abdul Qayyum	Optical Emission Spectroscopy for Characterizing Plasma

**18.00 – 19.00 General Body Meeting PPS**

**Thursday 3rd February 2011 Parallel Sessions at Sir Fazal-e-Hussain Reading Room**

**Chairman – Dr. M. Salahuddin**

09.30 – 10.00	Dr. Farhan Saif	Al-Hazan Billiard with waves of matter
10.00 – 10.30	Dr. M. H. Nasim	Radiative Opacity of Hot Dense Plasma; A Quantum Statistical Approach
10.30 – 11.00	Nisar Ahmad	EOS: Bulk properties of metals under extreme conditions

**11:00 – 11:30 Tea Break**

**Chairman - Dr. N. M. Butt**

11:30 – 12:00	Dr. Shoaib Ahmad	Self Organizing Carbon Nano Structures
12:00 – 12:30	Dr. Asghari Maqsood	Structural and microwave absorption properties of Ni(1-x)Co(x)Fe <sub>2</sub> O <sub>4</sub> (0.0 ≤ x ≤ 0.5) nanoferrites synthesized via co-precipitation route
12:30 – 13:00	Dr. Shazia Bashir	Laser-induced breakdown spectroscopy of Cd and Cu plasmas under different ambient conditions

**13.00 – 14.00 Prayer/Lunch Break**

**Chairman – Dr. M. Z. Butt**

14:00 – 14:30	Dr. Kamaluddin	A review of some recent Big Bang Inflationary Models and spontaneous symmetry breaking and restoring effects
14.30 – 15.00	Dr. Asghar Qadir	Observing molecular hydrogen clouds in M31
15. 00 – 15.30	Dr. Munir A. Rashid	Horizon Entropy in Fractional Cosmology

**15.30 – 16.00 Tea Break**

**Chairman - Dr. A. S. Bhatti**

16.00- 16.20	Dr. Asghar Hashmi	Role of Zn-interstitial defect in the ultraviolet emission from ZnO
16.20 – 16.40	Muhammad Yasin Shami	Synthesis and Characterization of Multiferroic BiFeO <sub>3</sub> nano-Powders by Chemical Route
16.40 – 17.00	Ijaz Bokhari	The Photo-ionization Cross-section Measurements from the excited states of Xenon
17.00 - 17.20	Rizwan Ahmad Khan	Room-temperature ferromagnetism in co-sputtered carbon-doped In <sub>2</sub> O <sub>3</sub> thin films
17.20 – 17 - 40	Dr. M. S. Awan	Development of Fe-Cr-Co Permanent Magnets
17.40 – 18 . 00	Dr. Javaid Anwar	Phase Dependent Electromagnetically Induced Transparency in Three-level System Using Squeezed Vacuum Reservoir

18.00 – 19.00

**General Body Meeting**

**Friday 04 February 2011**

**Parallel Sessions at Bokhari Auditorium**

**Chairman – Dr. Khaliq ur Rahman**

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|---------------|-----------------------|---|
| 09:30 – 10:00 | Dr. M. Shahid Rafique | Laser induced periodic surface structures on single crystal silicon |
| 10:00 – 10:30 | Dr. Atif Shahbaz      | Nuclear Signatures in super-intense laser fields via muonic atoms   |
| 10:30 – 11:00 | Dr. M. Aslam Khan     | A Road Map for Industrial Research                                  |

**11.00 – 11.30 Tea Break**

**Chairman – Dr. Shoaib Ahmad**

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|---------------|-------------------|---|
| 11:30 – 12:00 | A.S. Bhatti       | Tailoring and tuning of flat band voltages of TiO <sub>2</sub> /Si interfaces for possible application for photocatalysis |
| 12:00 – 12:30 | Dr. Abid Aleem    | Molecular and Cluster Ions in Gas Phase and Superfluid Helium Nanodroplets  |
| 12:30 – 13:00 | Dr. Kashif Sabeeh | Electronic Transport in Graphene  |

**Friday 04 February 2011**

**Parallel Sessions at Sir Fazal-e-Hussain Reading Room**

**Chairman – Dr. Riaz Ahmad**

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|---------------|---------------------|---|
| 09:30 – 10:00 | Dr. Ahmer Naweed    | The Optical Analog of Electromagnetically Induced Transparency  |
| 10:00 – 10:30 | Dr. Ajaz Ahmad Khan | Estimation of ion beam parameters and influence of working gas pressures on the deposition of ZrON films using cost-effective plasma focus device |
| 10:30 – 11:00 | Dr. Shahzad Mahmood | Effects of ion temperatures on nonlinear electrostatic structures in pair-ion plasmas   |

**11:00 – 11:30 Tea Break**

**Chairman – Dr. N. S. Qureshi**

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|---------------|---------------------|---|
| 11:30 – 12:00 | Dr. Waqas Masood    | A Panoramic View of the Space Plasmas                           |
| 12:00 – 12:30 | Dr. Tamaz Kaladze   | Modeling of Some Physical Phenomena of Precursors to Earthquake |
| 12:30 – 13:00 | Dr. Arshad M. Mirza | Ion-acoustic vortex formation in dense magnetoplasma            |

**13:00- 13:45 Prayer Break**

**13:45 – 14:30**

**Closing Ceremony**

**Chief Guest Vice Chancellor Dr. Khalid Aftab**

**Dr. Hamid Saleem will give brief introduction of NCP Programs**

**14:30- 15:30**

**Lunch/Departure**