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Remembering Subrahmanyan Chandrasekhar



Subrahmanyan Chandrasekhar, was born on 19th of October 1910 to Sitalakshmi and Chandrasekhara Subrahmanya in Lahore (then a part of British India). He was an Indian American astrophysicist who was awarded the Nobel Prize for Physics in 1983 with William A. Fowler "for his theoretical studies of the physical processes of importance to the structure and evolution of the stars". His mathematical treatment of stellar evolution yielded many of the best current theoretical models of the later evolutionary stages of massive star and black holes. The Chandrasekhar limit is named after him.

Chandrasekhar worked on a wide variety of astrophysical problems in his lifetime, contributing to the contemporary understanding of stellar structure, white dwarves, stellar dynamics, radiative transfer, the quantum theory of the hydrogen anion, hydrodynamic and hydromagnetic stability, equilibrium and the stability of ellipsoidal figures of equilibrium, general relativity, mathematical theory of black holes and theory of colliding gravitational waves. At the University of Cambridge, he developed a theoretical model explaining the structure of white dwarf stars that took into account the relativistic variation of mass with the velocities of electrons that comprise their degenerate matter. He showed that the mass of a white dwarf could not exceed 1.44 times that of the sun, which has been named after him as the Chandrasekhar limit. Chandrasekhar revised the models of stellar dynamics first outlined by Jan Oort and others by considering the effects of fluctuating gravitational fields within the Milky Way on stars rotating about the galactic centre. His solution to this complex dynamical problem involved a set of twenty partial differential equations; describing a new quantity he termed 'dynamical friction', which has the dual effects of decelerating the star and helping to stabilize clusters of stars.

Chandrasekhar studied at Presidency College, Madras (now Chennai) and University of Cambridge. He spent most of his career at the University of Chicago, spending some time in its Yerkes Observatory, and served as editor of *The Astrophysical Journal* from 1952 to 1971. Chandrasekhar was recruited to the University of Chicago faculty as Assistant Professor by Dr. Otto Struve and President Robert Maynard Hutchins in January 1937. He served as faculty at the University of Chicago from 1937 until his death in 1995 at the age of 84.

Chandrasekhar married Lalitha Doraiswamy in September 1936. Chandrasekhar was the nephew of Sir Chandrasekhara Venkata Raman, who was awarded the Nobel Prize for Physics in 1930.

Chandra worked closely with his students and expressed pride in the fact that over a 50-year period (from roughly 1930 to 1980), the average age of his co-author collaborators had remained the same, at around 30. He insisted that students address him as "Chandrasekhar" until they received their Ph.D. degree, after which time they (as other colleagues) were encouraged to address him as "Chandra". Subrahmanyan Chandrasekhar died on August 21, 1995.

ACADEMIC NEWS:

Publications:

Journals:

Tapas Bandopadhyay, B. Bandopadhyay, **B. N. Chatterji**, "Security of images through secret coding in bit plane watermarking and encryption", *Wulfenia Journal*, **22**(9), pp. 214-222, September 2015, Impact factor: 0.267 (SCI indexed).

Anindita Ray, Debashis De, "An energy efficient sensor movement approach using multi-parameter reverse glowworm swarm optimization algorithm in mobile wireless sensor network", *Simulation Modeling Practice and Theory*, Elsevier, **62**, pp.117-136, March 2016, ISSN: 1569-190X, Impact Factor: 1.38.

Journals (Online):

Subhrajit Mondal, Tania Khatun Mollah, Arindam Samanta, **Soumya Paul**, "A survey on network security using Genetic Algorithm", *International Journal of Innovative Research in Science, Engineering and Technology*, **5**(1), pp. 87-93, January 2016, ISSN (Online)-2319-8753, Impact Factor 5.442.

Arijit Dey, "Neural network modeling for simulation of error optimized QCA adder circuit", *International Research Journal of Engineering and Technology (IRJET)*, **3**(2), pp. 1003-1007, February 2016, e-ISSN: 2395-0056, p-ISSN: 2395-0072, Impact Factor: 4.45

Arijit Dey, Kunal Das, Debashis De, Mallika De, Sanjoy Das, "Fan-out constraints in quantum dot cellular automata circuit design", *Nanomaterials and Energy*, **5**(1), pp. 43-52, March 2016, ISSN 2045-9831, e-ISSN 2045-984X (without Impact factor).

Conferences:

Tapas Bandopadhyay, B. Bandopadhyay, **B. N. Chatterji**, "Defense in depth of images in the public domain through time sampling, watermarking and encryption", 3rd International conference for sustainable global development, 16-18 March 2016, New Delhi, Proc. 10th INDIACon-2016, IEEE Conference ID:37465, pp. 827-832.

T. Banerjee, J. N. Bera, S. Chowdhuri, G. Sarkar, "A comparative study between different modulation techniques used in field oriented control induction motor drive", Proc. 2nd International Conference on Control, Instrumentation, Energy & Communication



(CIEC), IEEE Xplore Compliant ISBN No.: 978-1-5090-0035-7/IEEE Xplore Compliant Part No.: CFP1697V-ART, 28-30 January 2016, pp. 121-125.

Sudipta Chakraborty, Suwendu Chattaraj, Abhik Mukherjee, "Particle filter based estimation of navigation information during in-flight post ejection", Proc. 2nd International Conference on Control, Instrumentation, Energy & Communication (CIEC), IEEE Xplore, ISBN No.: 978-1-5090-0035-7/ IEEE Xplore Compliant Part No.: CFP1697V-ART, 28-30 January 2016, Doi: 10.1109/CIEC.2016.7513784.



Gitosree Khan, Sabnam Sengupta, Anirban Sarkar, Narayan C Debnath, "XML based service registration system for enterprise cloud bus", Proc. IEEE International Conference on Communications, Management and Telecommunications (ComManTel), 28-30 Dec. 2015, Vietnam, pp. 250-255 (IEEE Xplore).

Gitosree Khan, Sabnam Sengupta, Anirban Sarkar, Narayan C Debnath, "Performance analysis of service discovery for Enterprise Cloud Bus (ECB)", Proc. IEEE International Conference on Industrial Technology, Taipei, Taiwan, 14th -17th March 2016, pp.1728-1735.

Gitosree Khan, Sabnam Sengupta, Anirban Sarkar, "Priority based service scheduling in Enterprise Cloud Bus architecture", Proc. 3rd International Conference on Foundations & Frontiers in Computer, Communication and Electrical Engineering – 2016 (C2E2 – 2016), ISBN: 9781138028777, 15th-16th January 2016, Mankundu, West Bengal, pp.363-367 (CRC Press).

Esa Bose, Sudipta Pal, "Magnetic property modulation by doping La in the Dy site of polycrystalline DyMn2O5", Abs. National Conference on Emerging Trends In Condensed Matter Physics & Materials Science (Etcmpms-2016), March 2016, pp. 7.

P. K. Ghosh, **R. Goswami**, D. Das, JBM Krishna, S. Chatterjee, P. V. Rajesh, "Semiconducting properties of Graphite-Clay Composite at extreme temperatures", Proc. National Thematic Workshop on Recent Advances in Materials Sciences, 8th March 2016.

INSTITUTIONAL NEWS:

Paper presentation in workshop

Bikromadittya Mondal, Kushal Dey, Paramita Roy, Susanta Chakraborty, "A novel design of reversible cryptographic circuit", Proc. 7th IEEE International Workshop on Reliability Aware System Design and Test (RASDAT), 7-8 January 2016, Kolkata, India.

Chandan Das, **Sarit Chakraborty**, Susanta Chakraborty, "A novel mixing technique for low cost sample preparation in digital microfluidic biochip", Proc. 7th IEEE International Workshop on Reliability Aware System Design and Test (RASDAT), 7-8 January 2016, Kolkata, India.

Students Conference Presentation

Abhishek P. Chowdhuri, Avirup Roy, Mayukh Sinha, Anurag Chaudhuri, "Vehicle monitoring system using RF transmission incorporating FSK technique"(Paper number-9803-156), SPIE Smart Structures and NDE, 2016, Las Vegas, USA.

Avirup Roy, Abhishek P. Chowdhuri, Mayukh Sinha, Anurag Chowdhuri "Emergency response system using opto-electronic impact sensors and MEMS"(Paper number-9803-158), SPIE Smart Structures and NDE, 2016, Las Vegas, USA.

Abhirup Roy and Abhishek Prabir Chowdhury students of Dept. of Electronics & Communication Engineering presented the papers at SPIE International Conference on Sensors and smart structure technologies for civil, mechanical and aerospace system held at Las Vegas, USA, during 21st-24th March 2016. Financial support was provided by the Institute.

New Academic Session

New academic session commenced from 22nd January 2016.

Saraswati Puja

Like every year, the Saraswati Puja of the Institute, celebrated on February 13, 2016, was full of fun, frolic, colours and exuberance galore. The goddess of knowledge was offered the Puspajali, the sacred flower offering by all present. It was followed by the distribution of 'Prasad' (blessing of the Goddess in the form of sweet and fruit offerings) and a sumptuous lunch. In a nutshell, the occasion was complete with active participation of the faculty and student members alike.

Prosaron

Ms. Susmita Biswas, Assistant Professor, Dept. of Electronics & Communication Engineering delivered talk on "Study of scan blindness of micro strip array using split ring resonator" on 20th January 2016.

E-Week 2016

E-week 2016 was celebrated in our institute during 20-27 February, 2016 in collaboration with NEN. It was inaugurated on 20th February by our Principal Prof. (Dr.) Sutapa Mukherjee. Various events like business model competition "Canvas", app development competition "Appmaniac" were organized.

Annual Sports



Annual Sports 2016 of our institute was held on 12th Feb, 2016 at Sports Authority of India (SAI) Complex Athletic ground, Netaji Subhas Eastern Centre, Salt Lake City near Yuba Bharati Krirangan. Students as well as faculty, and staff members of V.I.P. Road campus and second campus at Saltlake participated in the Annual Sports. The HOD's of different departments, faculty members; technical staff members along with the students were present to cheer all the participants. 100 m race, 200 m race, shot-put, long jump were organized for both the students and staff members. 4×100 m relay race took place for students (boys). Musical chair event was organized for students (girls), and lady staff members. Ball in the bucket was held for the lady staff members only. Kick the ball event was also held for the male staff members.

Cricket Tournament



Like previous years, intra-College Cricket tournament was held during 15th-19th Feb, 2016 at Sports Authority of India (SAI) Complex, Netaji Subhas Eastern Centre, Salt Lake City, near Yuba Bharati Krirangan. Students from five Departments (EE, ECE, CSE, IT & MCA) of V.I.P. Road campus and two Departments (BBA & BCA) of second campus at Saltlake participated in this tournament. Seven teams were divided into two groups (Group A and Group B) and league matches were played between them. The final match was played between CSE and EE on 19th Feb, 2016 at 1 p.m. and after a thrilling match, EE became the champion beating CSE by 7 runs. Abhishek Khemka of EE dept., 3rd yr. became Man of the match & Aditya of CSE dept., 3rd yr became Man of the Tournament. Prize distribution ceremony took place after the faculty and staff match was over. The winner's trophy to EE cricket team and runners-up

trophy to CSE cricket team were handed over by the Principal Prof. Dr. Sutapa Mukherjee.

Udbhav

The fifth issue of the institutional magazine **UDBHAV** was inaugurated on 16th March 2016 by our Principal Prof. Dr. Sutapa Mukherjee at City Centre 2, Rajarhat. The program was attended by the Dean (Academic Affairs) Prof. Dr. B. N. Chatterji, Registrar Dr. Sandip Ghosh, all HODs, faculty members, and administrative staff members and students. Contributions from the faculty members, administrative staff and from the students made the magazine a grand success. It is an annual magazine which gives the students an opportunity to showcase their literary talents and provides them a platform to express their thoughts and ideas ahead. Nevertheless the magazine also showcases the photography, culture which is very much prevalent among our students.



Publication of Udbhav

ELIXIR 2016



Anupam Roy

This year in the month of March BPPIMT fraternity celebrated the Cultural fest Elixir'16 with as usual extravagant excitement. Elixir'16 synergize the elegance of dance, the melody of music and the secrets of the untold story with events Bol Bachhan (audition for anchor selection), Fashionista (inter-college fashion competition), Enchore (inter-college solo singing competition), Theatrics (inter-college theatre competition), Just Dance (inter-college solo dance competition), Break free (inter-college group dance competition), Showstopper (3- minutes to fame) and War of Bands (inter-college band competition) and also with lot of other exciting events. The fest was inaugurated with lamp lighting ceremony by the Principal Dr. Sutapa Mukherjee and the Dean of academics Dr. B.N. Chatterji at City centre II on 16th March 2016.

War of bands and Fashionista were two major events of that day. In Fashionista, home team came second runner up. The last event was DJ night by DJ Harish. It was extremely enjoyed by the Audience. Popularity of Elixir '16 has grown exponentially every year since its inception, raising the bar to new heights. It is not just a college festival; it is a celebration of the spirit of youth, a platform for stunning talents, a fiesta of grandeur, innovation and passion.

After the gala opening at City Centre II, for the next couple of days cultural extravaganza continued in College premises with its usual enthusiasm. Rhapsody, 3 Minutes to Fame, Candid (Photography), Masquerade (Face Painting), Rang De Basanti (Rangoli), T-shirt Painting are the in house events students enjoyed most.

21st March was the final day of this festival with a Show at Nazrul Manch, Southern Avenue, Kolkata. After inaugural dance a dazzling show of final round of Break free was performed. Total fourteen teams were in the final round and two home teams performed very well. Our Alumnus Durnibar Saha was felicitated for his remarkable achievement in SA RE GA MA PA a famous reality Show in ZEE Bangla. Both the star performers performed very well and the evening became a lifetime memory. The Star Cast for this Year's Elixir Award Winner and Music Director Anupam Roy and Playback Singer Nikhil D'Souza with his Band. The Title sponsor was Gionee mobiles; Official Media partner was 91.9 Friends FM, Calcutta Chronicles and the event was well managed by Eventmass. The final prize distribution was held at college Seminar Hall on 26th May 2016.



Nikhil D'Souza

TECHSTORM 2.16

Upholding the perpetual tradition of looking beyond the obvious, Techstorm 2.16 once again left its footprints through its innovative endeavours in a quest to quench the incessant thirst of the enthusiasts and the nerds alike. The dead-on fusion of intricacies of technology, gripping quizzing rounds, programming ingenuity and pristine art rendered wings to the imagination of future technocrats, IT wizards, blooming artists and philosophers who put their best foot forward to make the event attain the pinnacle of success.



Robotics Venue

Like every year, the beginning of the journey was marked by an Inaugural Ceremony at the Institute Seminar Hall held on the 18th March, 2016. Colossal presence of luminaries like Prof. Bhabani Prasad Sinha of ISI, Kolkata and our Dean of Academic Affairs, Prof. B. N. Chatterji accompanied by our revered Principal Prof. Sutapa Mukherjee and esteemed Head of the Departments was a huge impetus for the programme. The auspicious lamp lighting along with a song and dance rendition followed by the addresses of the Dignitaries marked an apt start for the event.

The event venues bore testimony to the process through which the skills of the knowledge seeking souls were chiselled to give shape to their dreams. This platform proved to be a perfect haven for students to reveal their genius through their technological crafts which were reflections of their intelligent minds that can soar with

the right opportunity.

Among the flagship events of the programme were Six ROBOTICS Events which were marked by ingenuity of thoughts and brilliance in implementation. The Annual Inter-College Quiz Show, ARCANIA, hosted in association with Conscentia KU, witnessed an awestruck audience savouring the riveting rounds which were a toast to the sharp brains on the roller coaster rides of quizzing. PASSION WITH REELS, the movie-making event along with OBJET DE ART and 35 mm LIVE truly served as canvases to be decked by strokes of love and passion for art. FIFA and KHET, the two gaming events nurtured the students' wit and perseverance. Lastly, but in no way the least FANTA-C, the gateway to programming wizardry and OMEGATRIX, unravelling the magic in Mathematics were very telling events where participants had to put in all their wits together to seek Avant Garde solutions to the most unorthodox problems in nature and science. The striking presence of honourable Prof. Subhas Bhattacharyya took the standing of the event a few notches high.

The two day programme held on the 18th and 19th of March, this year, culminated in the Prize Distribution Ceremony where the Prizes were given away by the Principal and Senior Professors of the Institute. Students of IIT Roorkee, Jadavpur University, Calcutta Medical College, St. Xavier's College, Calcutta, IEM, BPPIMT, Techno India, Salt Lake, Netaji Subhas College of Engineering were among the few who walked away winning the laurels. In a nutshell, Techstorm 2.16 proved to be a perfect amalgam of science, technology and art, garnering huge appreciation from all quarters with crusaders from premier Institutes striving hard not to give it a miss.



Arcania being conducted

NSS Cell Activities

Maulana Abul Kalam Azad University of Technology allocated Self Financing Unit of NSS cell in our Institute with Dr. K. Prabakaran as convenor. Various events were organized by the NSS cell like International Women's day on 8th March 2016, Orientation Program on 29th March 2016. Blood donation camp was held in collaboration with National Medical College, Kolkata, and NRS Medical College, Kolkata, on 30th March 2016. 164 members donated blood on the day.

- **Editorial Committee:** The Editorial Committee consists of a team of Faculty Members, with Prof (Dr.) B.N. Chatterji, Dean Academics as the Chief Editor, Prof (Dr.) Sutapa Mukherjee, Principal as the Chief Advisor and Dr. Arijit Saha Associate Professor as the Editor of the Newsletter.
- **Call for Contributions:** Contribution for the Newsletter on the global and national news related to technical, economical, philosophical and general science etc. is solicited from all the members of the BPPIMT family and the students. The prospective contributors are requested to send their writings in about 200 words electronically to the mail address: bpimnewsletter@bpim.ac.in. Publication in the Newsletter is at the full discretion of the Editorial Committee.