

SATYENDRA NATH BOSE NATIONAL CENTRE FOR BASIC SCIENCES

NEWSLETTER

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Editorial

We are delighted to bring out this issue of the S. N. Bose Centre's newsletter. We highlight different academic and non-academic events which took place in recent times. This year marks the 25th year of our Centre. Prof. Thorne's lecture is certainly a pleasing moment to commemorate the Silver Jubilee celebration. The academic reports, academic events and the students' page reflect the vibrant atmosphere in the Centre. The scientists in our Centre probed the tiny world at nanometer scale, paving not only the way for technological wonders, but also for fruitful Indo-Europea collaborations. The regular contributions from the non-academic stuff show that they constitute an integral part of the Centre. We would like to thank the Jury board members for spending their valuable time in selecting the best contribution in various disciplines.

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22nd SN Bose Memorial Lecture: Grand Challenges in Energy: Supply, Demand and Consequences



The 22nd SN Bose Memorial Lecture was delivered by Prof. Graham R. Fleming, vice Chancellor for Research, University of California, Berkeley, USA. It was held at the Science City Mini Auditorium on 5th Dec, 2011. The central idea conveyed by the speaker was energy management, which he emphasized as the key problem of the 21st century. More precisely, the provision of sustainable energy is what human civilisation should be more concerned about.

Prof. Fleming pointed out that the energy 'problem' is a set of inter-related technological, scientific, economic and environmental challenges. Adding to this, there are problems from the sociological sectors also, which have to be resolved in order to make both ends of the supply-demand chain meet. The speaker illustrated some plausible and potential solutions in this regard.

Moreover, he pointed out, giving examples of specific programs at UC Berkeley and Lawrence Berkeley National Laboratory, some of the realistic achievements made till date.

Silver Jubilee Lecture: Warped side of our Universe



This year marks the Silver Jubilee celebration of the Centre. Prof Kip S Thorne, Fenyman Professor of Theoretical Physics (Emeritus), California Institute of Technology, delivered the Silver Jubilee Lecture at the Science City mini auditorium on 27th Dec, 2011. The speaker explained in his famed pedagogical eloquence, without risking of getting technical, the non-trivial concepts associated with space-time warping. Space-

time warps, which are manifestations of strongly correlated dynamics of gravitation alone, in the avatars of black holes, creation of our universe and gravitational waves featured as the central part of the lecture.

Using simulated animations Prof Thorne illuminated the idea of black hole mergers, the 'most violent phenomena' in our universe. This understanding is a result of huge success recently achieved by his group in the direction of numerical relativity. The speaker, who again is one of the most enthusiast founders of the Laser Interferometer Gravitational-Wave Observatory (LIGO) project, explained the scopes of LIGO and signals that are expected to be detected by it in the present decade. These signals should bear the fingerprints of the warping effects of our universe, which are till-date mostly unexplored.

Learning with a Network of Competing Synapses

Ajaz Ahmad Bhat

The work proposes and analyses a model on learning that arises as a result of interactions in a network of plastic synapses. Inspired by an earlier work on strategic learning by Mehta et. al. (PRE 1999), the work absorbs the evolutionary dynamics of one of the models presented therein while introducing the idea of game-theoretic competition between synapses, emerging out in some forms of correlation-based plasticity (a precursor of this was drawn in Mahajan et. al. (EPL 2011)). The dynamics of the model is driven by competition between synapses in their weak and strong states, which are characterized by different timescales. The learning of inputs and memory are meaningfully definable in an effective description of networked synaptic populations. We study, numerically and analytically, the dynamic responses of the effective system to various signal types, particularly with reference to an existing empirical motor adaptation model by Smith et. al. (PLoS Biology, 2006). The work helps provide a microscopic basis to some of the experimental findings in Smith et. al. by characterizing the neuronal system with precisely chosen parameters transparently. The dependence of the system-level behavior on the synaptic parameters, and the signal strength, is brought out in a clear manner, thus illuminating issues such as those of optimal performance for efficient learning and longer retentions, and the functional role of multiple timescales in agreement with the hand-reaching experiments by Smith et. al.

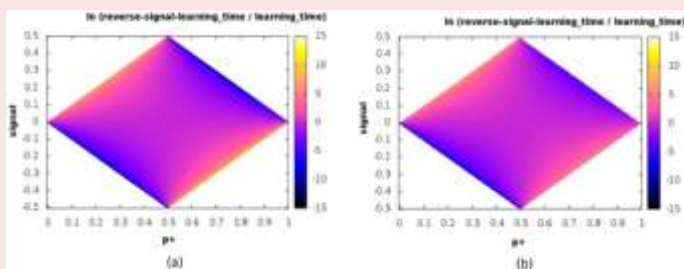


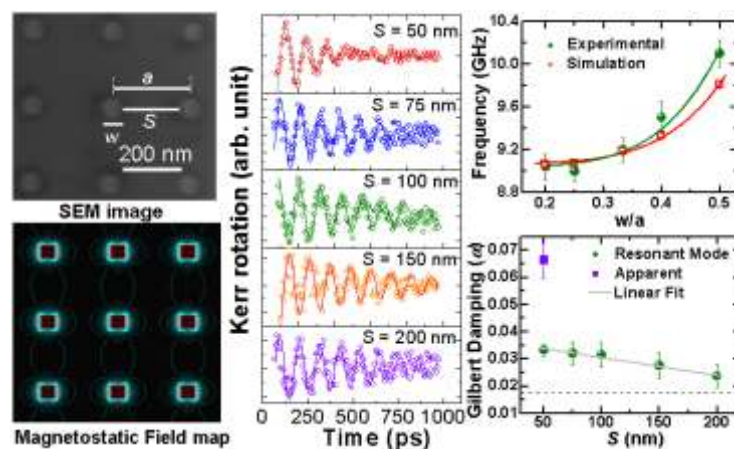
Figure: Anterograde interference and synaptic parameters. Variation of the ratio of the timescale for learning the reversed signal to the timescale for initial learning for the Signal - Reversed Signal protocol over the two-dimensional $p+ - s$ plane ($p+$ is set equal to $1 - p+$). Both analytical (a) and numerical (b) estimates are displayed. The plots show preferred (optimized) regions of parameters for different signals values.

References: Bhat AA, Mahajan G, Mehta A (2011). PLoS ONE 6(9): e25048. doi:10.1371/journal.pone.0025048

Detection of picosecond magnetization dynamics of 50 nm magnetic dots down to the single dot regime

Anjan Barman

The quest to measure the ultrafast magnetization dynamics of nanomagnets continues to be an important problem in nanoscience and nanotechnology. However, femto- and picosecond magnetization dynamics including the Gilbert damping of isolated nanomagnets down to 50 nm size has never been reported. Recently, we have reported an all-optical time-domain excitation and detection of ultrafast magnetization dynamics of arrays of lithographically patterned 50 nm $\text{Ni}_{80}\text{Fe}_{20}$ (permalloy) dots down to the single nanodot regime.¹ We have measured the dynamics by using a home-built time-resolved magneto-optical Kerr effect microscope based upon a two-color collinear pump-probe set-up. The two-color collinear arrangement enabled us to achieve a very good spatial resolution and sensitivity even in an all-optical excitation and detection scheme of the precessional dynamics. In the single nanodot regime the dynamics reveals one dominant resonant mode corresponding to the edge mode of the 50 nm dot with slightly higher damping than that of the unpatterned thin film. With the increase in the areal density of the array both the precession frequency and Gilbert damping increases significantly due to the increase in the magnetostatic interactions between the nanodots and a mode splitting and sudden jump in apparent damping are observed at an edge-to-edge separation of 50 nm. Numerical simulations show that the additional mode is a collective backward volume magnetostatic mode of the entire array.



References: Bivas Rana, Dheeraj Kumar, Saswati Barman, Semanti Pal, Yasuhiro Fukuma, YoshiChika Otani and Anjan Barman, ACS NANO, 5, 9559 (2011).

Escape from big rip due to backreaction of cosmic inhomogeneities

Nilok Bose

There exists overwhelming observational evidence for the present acceleration of the Universe, the cause of which is attributed to the mysterious dark energy. In spite of numerous creative ideas proposed for the present acceleration, there is still a lack of convincing explanation for this phenomenon. In most viable cosmological scenarios, our Universe is thus fated to have a cold and empty future, when all structures will eventually get ripped apart into the nothingness of empty space. The present acceleration of the Universe also leads to the formation of a cosmological future event horizon, from beyond which it is not possible for any signal to reach us. On the other hand, observations also tell us that our Universe is inhomogeneous up to the scales of superclusters of galaxies. The idea that backreaction originating from density inhomogeneities could lead to modifications in the evolution of the Universe as described by the background Friedmann-Robertson-Walker metric at large scales has gained popularity in recent years. Backreaction from density inhomogeneities provides an interesting platform for investigating

the question of present acceleration without invoking additional physics containing features that are not empirically well established. In this work we explore the impact of cosmic backreaction due to inhomogeneities on the global evolution in presence of the event horizon. The currently accelerating epoch causes the formation of an event horizon since the era of transition from the previously matter-dominated decelerating expansion. Since backreaction is evaluated from the global distribution of matter inhomogeneities, the event horizon demarcates the spatial regions which are causally connected to us, and hence impact the evolution of our part of the Universe. Based on the evolution equations in the framework proposed by Buchert, we show that backreaction in presence of the event horizon causes acceleration to slow down in the subsequent evolution. Transition to another decelerating era could ensue eventually at a future epoch, ensuring avoidance of a big rip.

References: Future deceleration due to cosmic backreaction in presence of the event horizon - Nilok Bose and A. S. Majumdar, *MNRAS Letters* 418, L45 (2011).

Two Novel Forms of Leggett-type Nonlocal Realistic Inequalities

Ashutosh Rai

Subsequent to the numerous experiments confirming violation of Bell-type inequalities derived under the assumption of local realism, one of the major interests in foundational studies of quantum mechanics today lies in investigating the question of incompatibility between quantum mechanics and nonlocal realism, stimulated by Leggett's derivation of a testable inequality as a consequence of a class of nonlocal realistic models. In this context, the forms of all the Leggett-type nonlocal realistic (LNR) inequalities that have been derived and tested to date hold good only if certain geometrical constraints are exactly satisfied by the spatial arrangements of the relevant measurement settings. Therefore, in these experimental tests, even an infinitesimal error in satisfying the required restrictions would make it logically less compelling to draw any firm conclusion about the falsification of the LNR model. We have removed this undesirable feature by deriving within the general framework of the LNR model two novel forms of LNR inequalities that hold good for any possible geometrical alignment of the experimental setup. These new inequalities would enable a more robust test of the LNR model within the experimental threshold visibility that has been already achieved. Another significant feature is that one of our LNR inequalities involves the least number of settings (3+3) achieved so far (Fig.1); this may be a much more convenient form to be tested in near future experiments.

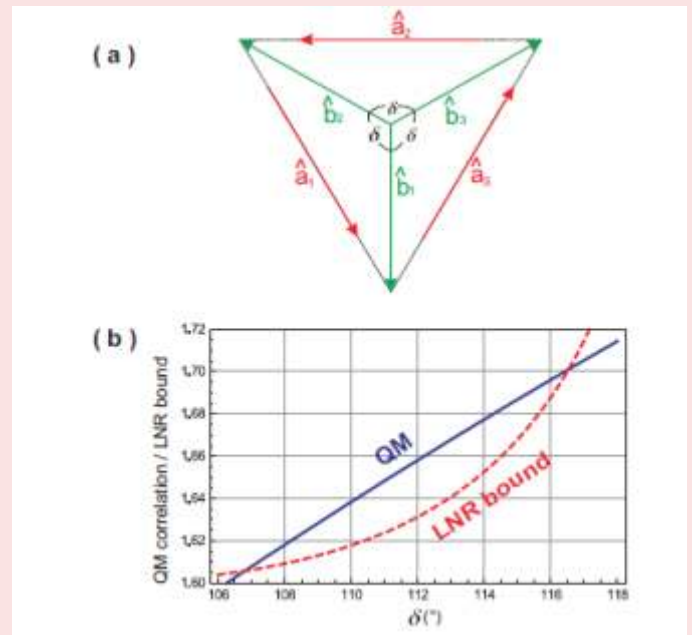


FIG. 1: (a) Measurement setting (b) Graph showing quantum mechanical (QM) violation of one of our Leggett-type inequalities involving least number of settings

References: Ashutosh Rai, Dipankar Home, and A. S. Majumdar, *Phys. Rev. A* 84, 052115 (2011).

First Kolkata Workshop on Role of Small Telescopes in Modern Astronomy Research

Soumen Mondal



A National workshop was organized at S N Bose National Centre for Basic Sciences during 7 - 8 November 2011. The workshop aimed to initiate our observing Astronomy program, and to provide a good platform for young astronomers to get wider overview of Astronomical observing facilities in India and elsewhere in the World. More than 45 participants attended the workshop, among participating Institutes are PRL, Ahmedabad; IIA, Bangalore; TIFR, Mumbai; ARIES, Nainital. Several experts from different Institutions gave a oral presentation, and topics covered are Star-forming regions, Supernovae and Novae, Black hole, GRBs, globular clusters, Brown dwarfs etc. A panel discussion on "Observing facilities at S.N. Bose Centre " was held on 7 November 2011 afternoon under the chairmanship of Prof. T. P. Prabhu (IIA), and members include Prof. N. M. Ashok (PRL), Prof. S. K. Chakrabarti (SNBNCBS), Prof. D. K. Ojha (TIFR), Prof. G.C. Anupama and Prof. A. Chakraborty (PRL).

Advanced School on High Resolution X-Ray Techniques Resolution X-Ray Techniques Atomic Force Microscopy and their Applications (14-15 December, 2011)

Barnali Ghosh (Saha)

This two-day school was organized jointly by S. N. Bose National Centre for Basic Sciences, Kolkata and Bruker AXS Analytical Instruments Pvt. Ltd, Kolkata and was attended by 91 participants. The scope of the programme was to cover the possible areas of applications of X-ray diffraction techniques, which are widely used for structural characterization of materials. Basics of powder diffraction, thin film reflectivity, stress, texture, grazing incidence, small angle scattering, rocking curves reciprocal space mapping etc were extensively discussed in the school. In addition to this, basic theory, new developments & applications of Atomic Force Microscopy were also covered.



BRIEF NEWS

1. The following students have been awarded Doctoral Degree:

a) Navin Chandra, Date of Degree Award: 14.09.2011, from the West Bengal University of Technology.

2. Following Students got placement

- a) Dr. Suman Sinha is currently an Assistant Professor at Sarsuna College under CU.
- b) Dr. Navin Chandra is currently a Lecturer at Vinoda Bhave University, Hazaribag, Jharkhand.
- c) Dr. Sourav Bhattacharya is currently a Post Doctoral Fellow at HRI, Allahabad.

EVLP VISITS

Seminars have been organized on a regular basis in the Centre under the Extended Visitors & Linkage Programme (EVLP). The noted speakers include Arup Kumar Raychaudhuri (SNBNCBS), Animesh Chakravorty (IACS), Supriya Chakraborty (IACS), Sudhansu Sekhar Mandal (IACS), Anunay Samanta (University of Hyderabad), Tanusri Saha-Dasgupta (SNBNCBS), BM Deb (IISER, Kolkata), Yashwant Singh (BHU), Charusita Chakrabarty (IIT, Delhi), Aaron Lewis (Nanonics Imaging Limited) and Srinivas Sridhar (Northeastern University).

Administrative Training Programme on Behavioral Skills

Shohini Majumder



The Centre organized a two-day 'Administrative Training Programme on Behavioral Skills' in association with IISWBM, Kolkata, held on 19-20 December and 22-23 December, 2011. The programme was conducted in two batches, comprising of 50 staff members. The programme comprised of interactive sessions on topics like Motivation, Conflict Management, Team Building, Change Management, Leadership, Self Development etc. The sessions were enriched with discussions and group exercises. Experienced faculty members of IISWBM delivered interesting lectures. According to the feedback received from the participants, it shows that the overall view is that organizing such training programmes each year will be a reason for motivation for all the employees. The programme ended with award of certificates to all the participants.

राजभाषा हिन्दी पखवाड़ा समारोह 14-30 सितम्बर 2011

द्वारा - सुष्मिता दासगुप्ता

प्रतिवर्ष की तरह इस वर्ष 2011 में भी हमारे केन्द्र में 15 सितम्बर हिन्दी पखवाड़े रूप में ममाया गया। सर्वप्रथम दिनांक 14 सितम्बर 2011 हिन्दी दिवस के दिन शाम चार बजे केन्द्र के डीन (संकाय) प्रो. जयंत कुमार भट्टाचार्य जी के लघु भाषण के माध्यम से इस पखवाड़े का औपचारिक उद्घाटन केन्द्र के व्याख्यान कक्ष-2 में सम्पन्न हुआ। इस अवसर पर विशेष अतिथि के रूप में हमारे बीच उपस्थित थे सुरेन्द्र नाथ कॉलेज (सान्ध्य) के हिन्दी विभागाध्यक्ष डॉ. प्रेम शंकर त्रिपाठी तथा भारत सरकार के हिन्दी प्रशिक्षण योजना के प्राध्यापक श्री विपति, जिन्होंने राजभाषा कार्यान्वयन की प्रगति के विषय में अपने बहुमूल्य सुझाव प्रस्तुत किए। डॉ.

प्रेम शंसक त्रिपाठी जी ने हिन्दी भाषा की प्रगति के लिए आगे बढ़ने के लिए सभी को प्रेरित किया तथा सभी उपस्थित जन का मुक्त रूप से अपने विचारों को प्रस्तुत करने के लिए आह्वान किया। तत्पश्चात हमारे केन्द्र के कार्कारी कुलसचिव डॉ. रंजन चौधुरी जी ने अपना वक्तव्य प्रस्तुत किया समारोह के अंत में प्रभारी हिन्दी प्रकोष्ठ द्वारा अतिथियों तथा उपस्थित सभी जनों के उद्देश्य में धन्यवाद ज्ञापन किया गया। इस पखवाड़े के अवसर पर केन्द्र में एक दिन विद्यार्थियों को हिन्दी चलचित्र दिखाया गया। इस अवसर पर केन्द्र के उच्चपदाधिकारियों को हिन्दी प्रकोष्ठ की तरफ से शुभकामना पत्र दिए गए। इस प्रकार प्रतिवर्ष की तरह इस वर्ष भी राजभाषा हिन्दी पखवाड़ा समारोह काफी सफल रहा।

THESIS SUMMARY

Some Aspects of the Magnetic Properties of Amorphous Magnetic Materials

Suman Sinha

Frequency dependent magnetoimpedance (MI) of amorphous $\text{Co}_{68.15}\text{Fe}_{4.35}\text{Si}_{12.5}\text{B}_{15}$ wire was studied in presence of various tensile stresses to understand the contributions to GMI from different domain regions. GMI effect has also been measured in glass-coated amorphous $(\text{Co}_{0.93}\text{Fe}_{0.07})_{63}\text{Ni}_{10}\text{Si}_{11}\text{B}_{16}$ microwires by applying tensile stresses upto 603 MPa and current annealing with a dc current of 50 mA for various time durations. GMI in glass-coated amorphous $\text{Co}_{83.2}\text{Mn}_{7.6}\text{Si}_{5.8}\text{B}_{3.3}$ microwire was increased to 129% on short-duration heat treatment by passing four current pulses of amplitude of 100 mA and each of 12 seconds duration. Experimental set-ups were developed for studying GMI effect and hysteresis loop measurements (by induction method) of the samples.

MBN measurements were performed (by home fabricated set-up) on amorphous $\text{Fe}_{70}\text{Ni}_8\text{Si}_{10}\text{B}_{12}$ and $\text{Fe}_{40}\text{Ni}_{40}\text{B}_{20}$ ribbons and amorphous $\text{Co}_{68.15}\text{Fe}_{4.35}\text{Si}_{12.5}\text{B}_{15}$ wire under different tensile stresses. Angular dependent MBN was studied to estimate the magnetic easy axis in amorphous $\text{Fe}_{40}\text{Ni}_{40}\text{B}_{20}$ ribbons. MBN study from as-quenched and annealed $\text{Fe}_{73.5}\text{Cu}_1\text{Nb}_3\text{Si}_{13.5}\text{B}_9$ ribbon showed the amorphous to crystalline phase transformation.

Exotic Objects in your Kitchen Sink

Jayanta Kumar Bhattacharjee

Everyone has noticed the phenomenon shown in the figure opposite. If we turn on our sink tap strongly enough, the jet impinges on the sink bed and a thin layer of water flows radially and fast. After a while it slows down and undergoes an almost abrupt jump in its thickness. This so-called hydraulic jump is almost ubiquitous. Incredibly enough, what you are observing is nothing less than an exotic celestial object! The hydraulic jump is a white hole- a black hole with time reversed.

No information leaves a black hole, no information enters a white hole. What makes the jump a white hole? Who carries information in a thin fluid layer? It is the ripples on the surface that result from a disturbance. When the tap is turned on strongly, the flow speed is higher than the

speed of the ripples. Ripples trying to move towards the point of impingement are swept out by the flow and no information can be carried in that direction. Viscosity slows down the fluid and at some radius the flow speed equals the ripple speed. This is the radius at which the jump is formed. From outside this radius no information can enter the inner region. The jump is the horizon of the white hole.

Direct experimental signature of this high velocity (“supersonic”) flow was found a year ago, when a disturbance created inside the jump was seen to be confined in a cone whose angle is determined by flow speed and ripple propagation speed. The cone exists only if the former is greater. The adjoining figure shows this Mach cone.



NEWS & VIEWS

Big Success with Tiny Crystal



Figure: Magnetism - large and small

Inset: Angelo Valli, Prof. Tanusri Saha-Dasgupta, Prof. Karsten Held

A little piece of iron wire is magnetic – just like a huge iron rod. When it comes to material properties, size usually does not matter. Surprisingly, researchers from Austria and India have now discovered that some materials show very unusual behavior, when they are studied in the form of tiny crystals. This could now lead to new materials with tailor-made electronic and magnetic properties.

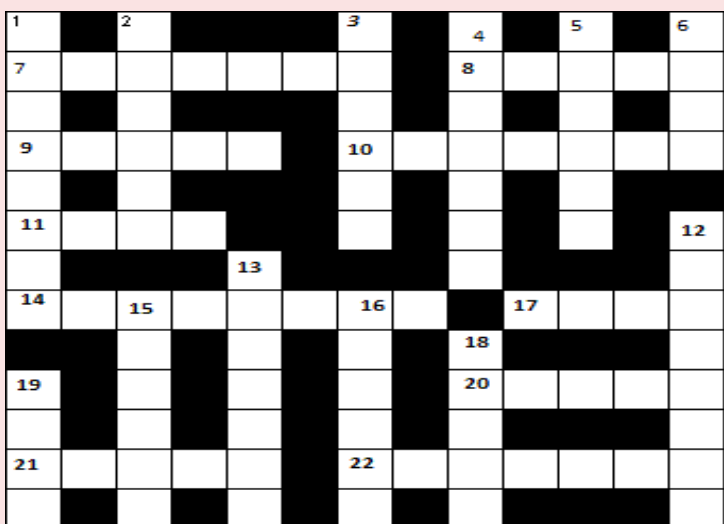
A team of scientists from the Vienna University of Technology (Austria) and the S.N. Bose National Centre Kolkata (India) investigated this phenomenon – and the new effect could be explained in computer simulations. In a crossover from large crystals to smaller crystals, the distribution of the electrons and their energy undergoes change. This, in turn, changes the electrical and magnetic properties of the crystal. “The quantum entanglement between strongly interacting electrons plays a very important role. By changing their size, the properties of the manganite-crystals can now be harnessed. Larger crystals are insulators, and they are not magnetic. Tiny crystal pieces on the other hand turn out to be metallic ferromagnets.

Phase transitions, at which important material properties change, play a major role in technological applications: For instance, when data is read from a hard-drive with a reading head, a transition between a conducting and a non-conducting state is utilized. Similar effects can be seen in manganite crystals. By changing the granular size of the crystals, the scientists can influence the critical temperature and magnetic field strength, at which the phase transition takes place. For technological applications, this opens up exciting new possibilities.

The manganite crystals studied by the Austro-Indian research team are only some three to fifteen billionths of a meter wide – but still they consist of hundreds or thousands of atoms. Simulating their behavior on a computer is therefore still a major challenge. Fortunately, the computer cluster VSC at the Vienna University of Technology provided remarkable computing power. The research project is a part of the Monami-program, in which the cooperation of European and Indian research teams in the field of computational material science is being promoted.

Crossword by Chandreyee Roy and Shauri Chakrabarty

Hints:



DOWN:

- 1 bistable circuit; 2 unit of measure for the rate of electron flow;
- 3 the state of least possible energy; 4 remnant; 5 organic compound
- 6 component of matter; 12 shortest distance between 2 points on a curved surface; 13 small drop of liquid; 15 subatomic particle;
- 16 neutral vector boson; 18 crack in the earth's crust resulting from the displacement of one side with respect to the other;
- 19 Bryophytes or non vascular plants.

Solution to last issue's crossword:



ACROSS

- 7 streamline, devoid of turbulence; 8 an occurrence; _____ horizon;
- 9 hypothetical entities that are considered to be building blocks of quarks and leptons;
- 10 value of field strength is same at all parts of this kind of a field;
- 11 low energy electron diffraction; 14 study of mud; 17 null; 20 red sea is red because of this
- 21 a shallow place in a body of water; 22 an antelope.

Last Few Months in SNB.....Caught in a Time Snap Biplab Bhattacharjee

The last year in SNB has been rather eventful. I'm just sitting back and trying to gather all those memories together on this half-page of The Newsletter (cause that is the maximum space I've been allotted!!! Although I'm afraid that this will surely exceed that limit.....) However, as a part of the activities that SNB saw in the last few months, I'll try to describe the events as impartially as possible.

The first thing I can remember was a first ever slide show presentation of snaps taken by the photographers of SNB. It was held on 20th of Oct-2011 at the Lecture Hall-3, presently named as 'Fermion'. Around ten to twelve participants had participated to contribute their photography. With a small introductory note from Prof. S.S. Manna followed by a brief presentation of photographs taken by Dr. P.Singh Deo, the slide show kicked off with delicate punches of anchoring from Soumyakanti Bose and Tejas Rathod. With a soft melody as a backtrack and a lot of mesmerizing snaps in front of the eyes, those were memorable two hours that made the evening special. The credit for organizing such a beautiful event goes to Suman Dutta and co. The exhibition was promising enough and we will be hoping more activities from the photographers.

With the Photography Club set in action it was then time for the long awaited SNB Football tournament to be held. It was the 1st of November, the tournament began. It went off pretty well with lots of expectations and enthusiasm. Around 30 students along with few staffs of SNB were divided into three teams, Team-A, Team-B, Team-C for the tie up. It was a grand kick start on the very first day, with a neck to neck fight between Team-A and Team-B, resulting to a 2-2 draw. As morning shows the day, it provided the most important impulse for an exciting and extravagant tournament. In the next game Team-C came into action and it was a heart breaking performance from Team-B as they were thrashed by 4 goals with none from them in return. Expectation from Team-C was sky high, and they started the next match in the same mood as they had left the previous one. It was about a few minutes for the game to finish when they were 3-1 ahead, but it was a miracle and Team-A fought back to equalize the score with two last minute goals from their captain. Team-B were in deep trouble after the first round of games and they desperately needed a win. But they never seemed to come back into the tournament and lost the next match to Team-C 3-0. Fortunately it was not too late and fate seemed to be by their side and they snatched a 4-2 victory over Team-A in their last match of the league and kept the tournament open. All eyes were on the last encounter where Team-A needed a desperate win against the leading Team-C to qualify for the finals. And Team-B members as well supporters were sitting with their fingers crossed hoping a win for Team-C or at least a draw. But all their prayers were in vein and Team-A won the game with a brilliant performance from Sabyasachi Ghosh.

Now it was time for the Grand clash between Team-A and Team-C. A lots of rescheduling of the date for the finale though had faded the interest of the final, the two teams played it out on the eve of 16th Nov-2011, and Team-C clinched the trophy defeating Team-A in a one sided affair, leaving beside a lot of controversies regarding refereeing and scheduling of date. Finally at the presentation ceremony it was all about love, cheers and fraternity that overwhelmed the scenario and almost all the players from the teams gathered and enjoyed each others company.

These were memories that will linger all through my life and may be of many other students as these had reinvented the pedestal of activities at our institute SNBNCBS.

PHOTOGRAPHY



IN NATURE



Rufous woodpecker Prosenjit Singha Deo

One of the five species of woodpeckers found around Kolkata. This is probably the most uncommon of the five. This was photographed at Chintamani Kar bird sanctuary in may 2010. A very restless bird which makes photographing it very difficult. Its habitation range extends from eastern India to south of China including Tibet. Another population is found in the Western Ghats of India and Sri-Lanka.

CORRIGENDUM

Dr. Suman Sinha was awarded PhD Degree on 22.11.2010 from Jadavpur University. Delayed reporting due to non receipt of information in time.

पिछले मुद्दे में छपी गई "ततैया (वैस्प) के शरीर में सौर्य कोष (सोलर सेल) है" शीर्षक पर आधारित सुष्मिता दासगुप्ता की लेख के अंत में दी गई टिप्पणी में प्यास शब्द को प्रयास पढ़ा जाए।

Editorial Board: J. Chakrabarti, K. Acharyya, R. Basu, C. Biswas, M. Bose, K. Gupta, M. Mitra, R. K. Mitra

The opinions expressed here are those of individuals. The administration of the Centre and the Editorial Board are not responsible for the opinions.

मेरा अक्स

पिछले दिनों से आईने में मेरा
अक्स अब पहचानता नहीं है मुझे।
वजह कहीं दिन की गीली धूप,
सिकुड़ी सी रौशनी,
तो कभी रात का टपकता
पिधला अंधेरा तो नहीं।
या कहीं आँखे ही तो नहीं
परचानती उस अक्स को,
नींदे जो छिन गयी हैं,
कीमत चुकाने को
कुछ ख्वाब देखे थेन।
यूँ तो मुस्कराता था अक्स
मुझे याद है,
पर अब कहाँ सजते हैं सुर
मेरे धूल लगे वायलिन पर।
मेरे अक्स के साथ जो
अधूरी कविता लिखी थी,
उसकी स्याही भी धुंधली
हो चली, कागज़
जो सील गया था।
अब तो उस मयखाने का
पता भी बदल गया है,
जहाँ के आईने का अक्स
पहचानता है मुझे।
कुछ नए आईने भी
खरीदे हैं, मुंहमांगी कीमतों पर,
दूसरों के आईने में भी
नालाशा उस अक्स को।
कुछ तो है जो पूरे से
थोड़ा कम है, जो
ये कमबख्त अक्स
पहचानता ही नहीं..

- कपिल गुप्ता