National Conference

ICSBAM

Activity Report

Annexure I

INTERNATIONAL CONFERENCE ON SPECTROSCOPYOFBIOMOLECULES AND ADVANCED MATERIALS (ICSBAM 2017)CONFERENCE REPORT

Spectroscopy has become a highly interdisciplinary scientific tool which correlates Physics, Chemistry, and Zoology. Our nation has the potential to become a platform for facilitating the advanced technological applications of spectroscopy. In view of this, the Department of Physics ,Chemistry and Zoology in Christian College, Chengannur has organized a four day international conference on spectroscopy entitled "International Conference on Spectroscopy of Biomolecules and Advanced Materials" (ICSBAM 2017) from 04-07 October 2017 at Haveli Backwaters Resort, Alappuzha. The ICSBAM 2017 provided a global platform for the research community to meet, discuss and share the latest advances in in the field ofspectroscopy.

Prof. Wolfgang Kiefer (Institute for Physical and Theoretical Chemistry, University of Würzburg, Germany), the former Editor-in-Chief of the *Journal of Raman spectroscopy*, was the Honorary Chairman of the international organizing committee. The executive committee was chaired by Dr. Achamma Alex, the Principal of the Christian College, Chengannur. Dr. Sunila Abraham (*Head of the Department of Physics, Christian College, Chengannur*) and Dr.I.Hubert Joe(*Department of Physics, MarIvanios College, Trivandrum*) were the executive committee conveners. The organizing secretary of the conference was Prof. V. K. Rastogi (Former Professor and Dean, CCS University, Meerut andthe Editor-in- Chief, *The Asian Journal of Physics* and *Asian Journal of Chemistry*) and the coordinator was Dr. A. Abraham (*Department of Physics, Christian College, Chengannur*).Dr.Sophia K. Philip(Head, *Department of Chemistry),* Dr. Johnson Baby(Head, *Department of Zoology)* , Dr. Ligi Cherian (*Department of Physics)* , Dr.Desy P. Koruth (*Department of Chemistry)* , and Prof. E. Daniel (Head, *Department of Mathematics)* were the co-convenors of various committees. All members of the science faculty served as members of the local organizing committee.

The first announcement and circular was sent already by the beginning of 2017 to different Universities, Educational Institutions, R&D Institutions, and Industries throughout India and other countries.

Inaugural Ceremony

The Inaugural ceremony of the conference was held at Haveli Backwaters, Alappuzha on 04th October 2017 at 03:00 PM and the function was presided over by His Excellency Rt. Rev. Dr. Joseph Marthoma Metropolitan(*Manager Christian College, Chengannur*). Dr.Achamma Alex (*Principal, Christian College, Chengannur*) welcomed the guests and participants. Prof.P. J. Kurien, Honourable Deputy Speaker of Rajyasabha, inaugurated the conference and released the copy of the proceedings of the conference. The Honarary Chairman of ICSBAM 2017, Prof.Dr. Wolfgang Kiefer, offered felicitation to the event. Prof. V. K. Rastogi, Organizing secretary, ICSBAM2017 summarized the theme of the conference. The inaugural ceremony was concluded by the vote of thanks given by the Convener of the conference, Dr.Sunila Abraham.

The first session of the conference was begun by the keynote address offered by Prof.Dr.Wolfgang Kiefer (Institute for Physical and Theoretical Chemistry, University of

Würzburg, Germany). His lecture, "Femto Raman at University and Colour Raman at Homelab", was based on the new trends inArcheological and medical applications of Ramanspectroscopy. It was followed by a plenary lecture by Dr. A. Ajayaghosh, FASc.; FNASc. FNA. (2012 Infosys Laureate),Director,CSIR-National Institute for Interdisciplinary Science and Technology (CSIR-NIIST),(Formerly RRL), Trivandrum.

Topics Covered in ICSBAM 2017

The Following topics were covered by top internationally reputed scientists in the scientific programme of ICSBAM 2017.

Topics covered:Spectroscopy of Biomolecules and Advanced Materials

Raman Spectroscopy	*Infrared Spectroscopy*
Nonlinear Raman Spectroscopy	*Resonance Raman Spectroscopy*
Surface Enhanced Raman Spectroscopy	*Time-Resolved Raman Spectroscopy*
Terahertz Spectroscopy	*Linear and nonlinear Raman imaging*
Multimodal imaging	*Hyperspectral imaging*
Vibrational optical activity	*Vibrational circular dichroism*
NMR spectroscopy	*Nucleic acids*
Amino acids and Proteins	*Metal-complexes*
Chemometrics	*Art and archeology*
Electronic and magnetic materials	*Energy harvesting*
Liquid crystals	*Solar cells*
Fuel cells and hydrogen storage	*Smart materials*
Energy storage batteries	*Super capacitors*
Thin films coatings surfaces	*Forensic, interstellar molecules*
Molecular materials and materials engineering	*Theoretical and computational methods*
Raman instrumentation & industrial applications	*computational study of advanced materials*
Solid state, semiconductors and nanoparticles	*Semiconducting heterostructure materials*
Inelastic neutron scattering technique for vibrational spectroscopy	*Techniques for molecular analysis*
Polymer materials	*Carbon materials*
Nano-structured materials	*Supramolecular nanocomposites*
Conducting polymers	*Plasmonic materials*
Laser ablation	*Multi-scale modeling*
Magnetic materials	*Metallic thin films*
Thin film solar cells	*Photochemistry*
Organic synthesis	*Hybrid materials*
Gas storage materials	*Phytochemistry*
Computational chemistry	*Biophysics & biochemistry*
Polymeric materials	*Conducting polymers*
DNA bar coding	*Molecular phylogeny*

Cyto-taxonomy (karyological approach)	*Immuno-cytochemistry (biological approach)*
Bio-nanomaterials for biomedical technology	*Metamaterials and biomedical sensors*
Bio-medical applications	*Antimicrobial peptides*
Genome sequencing	*Proteomics*
Personalized medicine	*Drug designing*

Scientific Programme

The technical scientific programme of the conference contained one Keynote lecture, four Plenary lectures, 29 invited Talks,15 invited lectures, 17 oral presentations, and 65 poster presentations. About 253 participants including 34 foreign delegates , about 130 delegates from other states andstudents were present in the Conference.

Second day of the conference (05 October 2017 Thursday)

The scientific programme of the second day started with the Plenary lecture by Prof.Dongho Kim(Spectroscopy Laboratory for Functional π-Electronic Systems and Department of Chemistry, Yonsei University, Korea- he will be the chairman of ICORS-2018) on Thursday 05 October 2017 at 09:00 AM. He gave a lecture on the topic "*Control and switching of aromaticity in various expanded porphyrins: Spectroscopic and Theoretical analyses*" for about 45 minutes and this was followed by the discussions related to the Plenary lecture. Several internationally reputed scientists were actively involved in the discussions.

The plenary lecture was followed by two parallel sessions. One special invited talk was given on the topic "*Applications of Laser And Spectroscopy in Security & Defence*" by Dr.Arun Kumar Gupta, Ex-Director, Instruments Research & Development Establishment,(IRDE), Dehradun and the other by Prof. Sylvia Turrel, Emeritus Professor, Laboratoire de Spectrochimie IR et Raman Université Lille, 59650 Villeneuve d'Ascq, France on the topic "*Spectroscopy to study structural problems in art and archaeology:Use of micro and macro spectroscopic techniques for the study of glasses, ceramics and porcelains*".

Prof.Arnulf Materny, Department of Physics and Earth Sciences, Jacobs University Bremen, Campus Ring 1, 27759 Bremen, Germany and Prof.Youg Mee Jung, Department of Chemistry, Kangwon National University, Chunchon 24341, Korea were also given invited talks before the tea break.

Prof.Dr.Hugh Barr, Bio photonics Research Unit, Leadon House, Gloucestershire Royal Hospital, Great Western Road, Gloucester GL13NN United Kingdom had given an invited talk on the topic "*The potential for Spectroscopic Screening and Surveillance for Early Esophageal Cancer*". An article regarding his talk has come in the news paper and received wide publicity and appreciations. Prof.Mauricia Alcolea Palafox,Departamento de Química-Física I, Facultad de Ciencias Químicas, Universidad Complutense, Madrid-28040, Spain and Prof.K P Rajappan Nair, InstitutfürPhysikalischeChemie und Elektrochemie, Wilhelm-Gottfried-Leibniz-UniversitätHannover,Callinstraße3A, 30167Hannover, Germany were

given the invited talks in parallel session before the tea break. Prof. Koichi Iwata ,Department of Chemistry, Faculty of science, Gakushuin University, 1-5-1 Mejiro, Toshima-ku, Tokyo 171-8588, Japan, Dr.Debabrata Dash, Department of Biochemistry, Institute of Medical Sciences ,Banaras Hindu University,Varanasi-221 005, India , Prof. Smilja Todorovic, ITQB, Universidade NOVA de Lisboa, Av. da República, 2780-157 Oeiras, Portugal, Dr.Mahesh Hariharan, IISER,CET Campus, Sreekaryam, Thiruvananthapuram, Kerala- 695 016, India were given the invited talks after the tea break.

Dr.Animesh Ohja, Motilal Nehru National Institute of Technology, Allahabad211004, India, Prof.C. Sudarsnakumar, School of Pure and Applied Physics,Mahatma Gandhi University, Kottayam, Kerala, India, Dr.Jayasree R S, Sree ChitraTirunal Institute for Medical Sciences and Technology, BMT Wing, Thiruvananthapuram, India and Dr.K. Sundararajan, Analytical Chemistry and Spectroscopy Section, Materials Chemistry Division Materials Chemistry and Metal Fuel Cycle Group, IGCAR, Kalpakkam-603127, India were given invited talks in the parallel session in their respective topics after the tea break. Then the sessions were closed for lunch break.

After the lunch break, the poster session I (for the poster PP01-PP34) were conducted on 5th October 2017 at 01:30PM at the front hall of the first floor to encourage the young scientists in various topics. However, the delegates were allowed to display their posters from the morning onwards.

The post lunch session was begun with the Invited talk by Prof.Patrick Henning Neurnberger, Physikalische Chemie II, Ruhr-Universität Bochum, D-44780 Bochum, Germany followed by three Oral presentations in one session. In the other sesson invited lectures were given by Dr.V. BenaJothy,Assistant Professor,Department of Physics and Research Centre, Women's Christian College, Nagercoil -629 001, TamilNadu, INDIA, Dr. N. Ravi ,Assoc. Professor(Trichy), and Dr.Sinu Mathew, Assistant Professor, St. Berchmans College, Changanassery, Kottayam, Kerala-686101, India.

After the tea break programme started with the invited lecture by Dr.Jahur A Mondal, Radiation & Photochemistry Division, Bhabha Atomic Research Centre,Trombay, Mumbai 400085, India .The final scientific programme of the second day was ended with two oral presentations.Finally, in the evening, after taking the group photo all delegates were gone for boating in house boat in the river for sightseeing as part of this conference and they enjoyed the resorts of Kerala and had a conference dinner at Haveli Hotel, Alappuzha, Kerala.

Third day of the conference (6th October 2017 Friday)

The scientific technical programme of the third day of the conference started with the plenary lecture at 09:00 AM on Friday 6th October 2017 by Prof.Ingo Fischer,University of Wuerzburg, Institute of Physical and Theoretical Chemistry, Am Hubland, D-97074 Wuerzburg, Germany. He has given a lecture on the topic "Understanding the photodynamics of organic molecules with relevance in material science" for about 45 minutes and this was followed by the discussions related to the plenary lecture.

Annexure I

The plenary lecture was followed by parallel sessions at two venues. Invited talks were given by Prof.Dr. H.M. Heise, South-Westphalia University of Applied Sciences, Germany, Dr.Jorge Caldeira Cii EM Instituto Superior de Ciências da SaúdeEgas Moniz, and UCIBIO, Requimte, Faculdade de Ciencias e Tecnologia, Universidade Nova de Lisboa, 2825-516 Caparica, Portugal and Prof.L K Samanta ,Former Professor and Dean Faculty of Science Dept. of Physics, The University of Burdwan, Burdwan-713104, West Bengal, India in one hall.

Prof.Ping Heng Tan, State Key Lab of Super lattices and Microstructures Institute of Semiconductors, Chinese Academy of Sciences, Beijing, China, Prof.Patrick Hemberger, Laboratory for Femtochemistry and Synchrotron Radiation, Paul Scherrer Institute, 5232 Villigen-PSI, Switzerland and Dr.Nimish Dixit, Scientist, Photonics Division,IRDE, Raipur Road,Dehradun - 248 008,Uttarakhand, India were given the invited lectures in the other hall before the tea break.

After the tea break,the session-1 continued with the invited talks by Dr.Elin Moe, Instituto de Tecnologia Química e BiológicaAntónio Xavier ,(ITQB-NOVA), Oeiras, Portugal, Dr.Rekha Rao. Solid State Physics Division, Bhabha Atomic Research Centre, Trombay, Mumbai-400 085, India and Dr.Mukesh Pandey, High Pressure and Synchrotron Radiation Physics ,Division, Bhabha Atomic Research Centre, Mumbai-400 085, India followed by two oral presentations.

In the parallel session-2,invited lectures were given by Dr.T R Ravindran, Materials Science Group, HBNI, Indira Gandhi Centre for Atomic Research, Kalpakkam- 603 102, India, Dr.N.Ramanathan, Analytical Chemistry and Spectroscopy Section, Materials Chemistry Division, Materials Chemistry & Metal Fuel Cycle Group, Indira Gandhi Centre for Atomic Research, Kalpakkam-603 102, India. ,Dr.Karthick Thangavel, Department of Physics, University of Lucknow, Lucknow-226 007, India and Dr.Manik Pradhan, S. N. Bose National Centre for Basic Sciences, Salt Lake, Sector III, Kolkata-700106, India. Then the sessions were closed for lunch break.

After the lunch break, the poster session II (for the poster PP35-PP65) were conducted on 10th July 2014 at 01:30PM at the front hall of the second floor to encourage the young scientists in various topics. However, the delegates were allowed to display their posters from the morning onwards.

This was followed by three Invited lectures by Prof.Bernd Engels, University of Würzburg, Institute of Physical and Theoretical Chemistry, Emil-Fischer-Straße 42, D-97074 Würzburg, Dr.P.A.Praveen and Dr.N.Vijayan,CSIR-National Physical Laboratory, Dr KS Krishnan Marg, New Delhi in main venue and six oral presentation competition in the other venue before the tea break..

Invited talks were given by Prof.Daniel Horacio Murgida, Departamento de Química Inorgánica, Analítica y QuímicaFísica, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires and INQUIMAE-CONICET, Argentina and Prof.Tatsuiki Yamamoto, Faculty of Life and Environmental Science, Shimane University, 1060 Nishikawatsu-cho, Matsue, Japan in the main venue after the tea break . The remaining four oral presentation competitions for Dayawati Rastogi awards were also conducted in the second venue.

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Then, all the delegates of ICSBAM2017 were invited to participate in the special cultural programme arranged by Christian College.Finally, all delegates were enjoyed the cultural fest by our college students and Kathakali by expert troops as part of this conference in the evening at 5.30 pm on 6th October 2017.Finally, a dinner was given to all the delegates.

Final day of the conference (7th October 2017 Saturday)

The scientific technical programme of the fourth day of the conference started with the Plenary lecture at 09:00 AM on Saturday 7thOctober 2017 by Prof.Janos Mink ,Institute of Materials and Environmental Chemistry, Research Center of Natural Sciences, Hungarian Academy of Sciences, P.O. Box 286, H-1519, Budapest, Hungary. He gave a lecture on the topic " Infrared and Raman Spectroscopic and Theoretical Studies of Molecular Systems for Advanced Materials" for about 45 minutes and this was followed by the discussions related to the plenary lecture. An invited talk was given by Prof.Takashiro Akitsu, Department of Chemistry, Faculty of Science, Tokyo University of Science,1-3 Kagurazaka, Shinjuku-ku, Tokyo 162-8601, Japan before the tea break.

After the tea break programme started with Invited talks by Prof.Uma Devi, Prof.Prafulla K Jha,Department of Physics, Faculty of Science, The Maharaja Sayajirao University of Baroda, Vadodara-390 002, India and Prof.Kuruvilla Joseph,Sr.Professor and Dean (SA), Department of Chemistry Indian Institute of Space Science and Technology, Department of Space, Govt. of India, Valiamala, Thiruvanathapuram-695547,India before the lunch break.

The valedictory function was held, at 1.00 PM, on 7th October 2017.Honourable Minister of Kerala, Advocate Mathew T. Thomas had felicitated and distributed the Dayawati Rastogi awards for two invited lectures, two oral presentations and three poster presentations. During the function many participants expressed their feedback and was taken by Dr. A. Abraham. All of them appreciated the organizers for their unity and combined effort to make the conference truly international for its grand success. They also sincerely appreciated the hospitality of the organizers.The conference has benefited the participants very much, both academically and mentally. Group photos were also taken.Four days of togetherness has developed a strong and healthy support between the experts in the field of spectroscopy and Material Science. Many novel and innovative ideas to reform the field of spectroscopy and its applications and related areas, were evolved through the discussions and sharing between the distinguished professors and renowned scientists from the different parts of the world. The conference has helped the Department of Physics to initiate new collaborations and also strengthen the collaborations with the Universities within and outside India. Interaction with the eminent personalities has been a great motivation to the research scholars and post graduate students participated in the conference. Discussions on student exchange programme with reputed institutions abroad were initiated.

Annexure I

Outcome, recommendations and future plan

The conference has benefited several students and research scholars in several manners. The students were excited to get to know the recent trends in the topic of modern spectroscopy. We strongly believe that the discussion session with the foreign delegates immensely boosted the analytical and interpretation skill of the research scholars. As a prime outcome of the conference different national groups were offered to use the exclusive facilities of spectroscopic tools hosted by few of the foreign delegates and thereby leading to an eventual collaboration. Prof.TakashiroAkitsu, Japan offered co-authership of a book in which we have to write some chapters and agreed to provide collaboration with him. Prof.Dr. Wolfgang Kiefer convened a meeting of Alexander volt Humbolt (AvH) fellows across the world during the conference which had inspired young researchers to explore the opportunities available in Germany.

In the post conference discussion session, the delegates proposed to involve industries in future conferences. In addition, they also proposed to organize hands on tutorial session for the research scholars and young researchers prior to next conference as many of the analytical tools presented were of novel importance to the students. Additionally, there was a collective decision to divide topics into two main sub fields such as Spectroscopy of Biomolecules and Nano Technology and to rotate the theme of the conference every other year. The organizing committee also decided to include topics related to Photo sensitive Materials and ferro fluids into the future conferences.

As a future plan, the organizing committee decided to organize the series of the same conference every year and Prof.Johanan Christian Prasana, Madras Christian College agreed to host the conference next year in Chennai. As per the discussion with the delegates from Germany, Portugal and Japan, we have decided to apply for bilateral projects to facilitate the ongoing research on advanced Materials, Spectroscopy and Space Physics. In addition, prof. Kiefer and Prof. Patrick Hemberger agreed to provide funding for summer fellowship for the Research scholars in the academic year 2018.

Dr. Sunila Abraham

[Signature of the Convener]

മനുഷ്യനന്മയാകണം ശാസ്ത്രത്തിന്റെ പ്രധാന ലക്ഷ്യം- പി.ജെ.കുര്യൻ

ആലപ്പുഴ: മനുഷ്യനന്മയായിരിക്കണം ശാസ്ത്രത്തിന്റെ പ്രധാന ലക്ഷ്യമെന്ന് രാജ്യസഭാ ഉപാധ്യക്ഷൻ പ്രൊഫ. പി.ജെ.കുര്യൻ. ചെങ്ങന്നൂർ ക്രിസ്ത്യൻ കോളേജിലെ വിവിധ സയൻസ് വകുപ്പുകൾ ചേർന്ന് സംഘടിപ്പിക്കുന്ന 'സ്പെക്ടോസ്കോപ്പി ഓഫ് ബയോമോളിക്യൂൾസ് ആൻഡ് അഡ്വാൻസ്ഡ് മെറ്റീരിയൽസ്' അന്തർദേശീയ കോൺഫറൻസ് ഉദ്ഘാടനം ചെയ്യുകയായിരുന്നു അദ്ദേഹം. 'സ്പെക്ടോസ്കോപ്പിയിലെ പഠനങ്ങൾ എയ്ഡ്സ്, കാൻസർ ചികിത്സാരംഗങ്ങൾക്ക് മുതൽക്കൂട്ടാവുമെന്നും അദ്ദേഹം പറഞ്ഞു.

ചെങ്ങന്നൂർ ക്രിസ്ത്യൻ കോളേജ് സംഘടിപ്പിക്കുന്ന 'സ്പെക്ടോസ്കോപ്പി ഓഫ് ബയോമോളിക്യൂൾസ് ആൻഡ് അഡ്വാൻസ്ഡ് മെറ്റീരിയൽസ്' അന്തർദേശീയ കോൺഫറൻസ് രാജ്യസഭാ ഉപാധ്യക്ഷൻ പ്രൊഫ. പി.ജെ.കുര്യൻ ഉദ്ഘാടനം ചെയ്യുന്നു

വിവിധ രാജ്യങ്ങളിൽനിന്നുള്ള ശാസ്ത്രകാരന്മാരുൾപ്പെടെ ഇരുന്നൂറോളം പേരാണ് സെമിനാറുകളിൽ പങ്കെടുക്കുന്നത്. ഏഴുവരെ ആലപ്പുഴ ഹവേലിയിലാണ് സെമിനാർ നടക്കുന്നത്. ഈ മേഖലയിൽ പ്രവർത്തിക്കുന്ന ശാസ്ത്രജ്ഞരെ ഒരേ വേദിയിലെത്തിക്കുക, കേരളത്തിലെ ഗവേഷകരുമായി സംസാരിക്കാൻ അവസരമുണ്ടാക്കുക എന്നീ ലക്ഷ്യങ്ങളും മുൻനിർത്തിയാണ് സെമിനാർ നടത്തുന്നത്.

ജോസഫ് മാർത്തോമ മെത്രാപ്പോലീത്ത അധ്യക്ഷനായിരുന്നു. ജർമൻ പ്രൊഫ. വുംഫ് ഗാംഗ് കിഫർ, പ്രൊഫ. അച്ചാമ്മ തോമസ്, പ്രൊഫ. വിനോദ് കുമാർ ദസ്സോഗി, ബിനുജ തോമസ്, ഡോ. സുനിൽ എബ്രഹാം തുടങ്ങിയവർ സംസാരിച്ചു.

എന്താണ് സ്പെക്ടോസ്കോപ്പി

രാസവസ്തുക്കളും പ്രകാശത്തോട് പ്രതിപ്രവർത്തിക്കുന്നത് വ്യത്യസ്തമായാണ്. ഈ പ്രത്യേകത ഉപയോഗിച്ചാണ് ഓരോ തന്മാത്രയും വേർതിരിക്കപ്പെടുന്നത്. ഇതാണ് സ്പെക്ടോസ്കോപ്പി. നിത്യജീവിതത്തിലെ ഒട്ടേറെ മേഖലകളെ ഈ സാങ്കേതിക വിദ്യാരംഗം സ്വാധീനിക്കുന്നുണ്ട്. ഭക്ഷ്യവസ്തുക്കളുടെ മായം കണ്ടെത്തുന്നതും ഇതേ വിദ്യ ഉപയോഗിച്ചുതന്നെ. വ്യവസായം, ഔഷധനിർമാണം, നാനോ സയൻസ്, ബയോ മെഡിക്കൽ രംഗങ്ങളിൽ വ്യാപകമായി സ്പെക്ടോസ്കോപ്പി എന്ന സാങ്കേതിക ശാസ്ത്രശാഖ ഉപയോഗിക്കുന്നുണ്ട്.

Mathrubhumi e-paper ALAPPUZHA
Thu, 05 October 2017
digitalpaper.mathrubhumi.com/c/22676158

ICSBAM Inauguration News in Mathrubhumi Daily

യുക്തിരാഹിത്യം പരിഹരിക്കാൻ ശാസ്ത്രം ജനകീയമാക്കണം: പി.ജെ. കുര്യൻ

ആലപ്പുഴ ● ശാസ്ത്രം വളരെ വികസിച്ചിട്ടും യുക്തിരഹിത ചിന്തകളും അക്രമവും വിഭാഗീയതയും മനുഷ്യരിൽ വർധിക്കുകയാണെന്നും ഇതു പരിഹരിക്കാൻ ശാസ്ത്രജ്ഞർ ലാബുകളിൽ നിന്നു സമൂഹത്തിലേക്കു കൂടുതലായി ഇറങ്ങണമെന്നും രാജ്യസഭാ ഉപാധ്യക്ഷൻ പി.ജെ.കുര്യൻ പറഞ്ഞു.

'സ്പെക്ട്രോസ്കോപ്പി ഓഫ് ബയോമോളിക്യൂൾസ് ആൻഡ് അഡ്വാൻസ്ഡ് മെറ്റീരിയൽസ്' എന്ന വിഷയത്തിൽ ചെങ്ങന്നൂർ ക്രിസ്ത്യൻ കോളജ് സംഘടിപ്പിക്കുന്ന രാജ്യാന്തര സെമിനാർ ഉദ്ഘാടനം ചെയ്യുകയായിരുന്നു അദ്ദേഹം.

ഇന്ത്യ ഗവേഷണങ്ങളുടെ കാര്യത്തിൽ കൂടുതൽ മുന്നേറണമെന്നും പി.ജെ.കുര്യൻ പറഞ്ഞു. ഡോ. ജോസഫ് മാർത്തോമ്മാ മെത്രാപ്പൊലീത്ത അധ്യക്ഷത വഹിച്ചു.

പ്രിൻസിപ്പൽ ഡോ. അച്ചാമ്മ അലക്സ്, സെമിനാർ ഓർഗനൈസിങ് സെക്രട്ടറി പ്രഫ. വിനോദ്കുമാർ രസ്തോഗി, ഡോ. വുൾഫ് ഗാംങ് കീഫർ, കൺവീനർ ഡോ. സുനില അബ്രഹാം എന്നിവർ പ്രസംഗിച്ചു.

ഏഴു വരെ നടക്കുന്ന പരിപാടിയിൽ ഇന്ത്യയ്കത്തും പുറത്തുമുള്ള വിവിധ സർവകലാശാലകളിൽ നിന്നും ഗവേഷണകേന്ദ്രങ്ങളിൽ നിന്നുമായി 30 വിദേശികളടക്കം 200ൽ അധികം പേർ പ്രബന്ധങ്ങൾ അവതരിപ്പിക്കും. ഇന്നു രാവിലെ ചർച്ചകളും പ്രബന്ധാവതരണങ്ങളും തുടരും.

പിപ്പുര വാതിൽ

സ്പെക്ട്രോസ്കോപി

വിവിധ റേഡിയേഷനുകളോട് ഓരോ വസ്തുവും പ്രതിപ്രവർത്തിക്കുന്നതിലെ വ്യത്യാസം വിശകലനം ചെയ്തു വസ്തുക്കളുടെ ഘടന, തന്മാത്ര ഉൾപ്പെടെയുള്ളവ പഠിക്കുന്നതാണു സ്പെക്ട്രോസ്കോപ്പി. നിത്യജീവിതത്തിൽ വളരെയേറെ മേഖലകളിൽ ഈ സാങ്കേതിക വിദ്യ ഉപയോഗിക്കുന്നു. വ്യവസായം, ഔഷധനിർമാണം, നാനോ സയൻസ്, ബയോമെഡിക്കൽ തുടങ്ങിയ രംഗങ്ങളിൽ സ്പെക്ട്രോസ്കോപ്പി പ്രയോജനപ്പെടുത്തുന്നു. കുറ്റാന്വേഷണമേഖലയിലും സ്പെക്ട്രോസ്കോപ്പിക്കു പ്രാധാന്യമുണ്ട്. മലയാളത്തിലെ ഒരു നടൻ മരിച്ചപ്പോൾ ഉള്ളിലുണ്ടായിരുന്ന മദ്യത്തിനൊപ്പം മാരക രാസവസ്തുക്കളും ഉണ്ടായിരുന്നു എന്നു കണ്ടെത്തുന്നതിനു സ്പെക്ട്രോസ്കോപ്പി ഉപയോഗിച്ചിരുന്നു.

ചെങ്ങന്നൂർ ക്രിസ്ത്യൻ കോളജ് സംഘടിപ്പിക്കുന്ന 'ഐസിഎസ്ബിഎഎം 2017" രാജ്യാന്തര ശാസ്ത്ര സെമിനാർ ആലപ്പുഴയിൽ രാജ്യസഭ ഉപാധ്യക്ഷൻ പി.ജെ.കുര്യൻ ഉദ്ഘാടനം ചെയ്യുന്നു. പ്രിൻസിപ്പൽ ഡോ. അച്ചാമ്മ അലക്സ്, ഡോ. സുനില ഏബ്രഹാം, ഡോ. ജോസഫ് മാർത്തോമ്മാ മെത്രാപ്പൊലീത്ത, ചെയർമാൻ ഡോ.വുൾഫ് ഗാംങ് കീഫർ, പ്രഫ.വിനോദ് കുമാർ രസ്തോഗി എന്നിവർ സമീപം. ചിത്രം: മനോരമ

ജില്ലാതല വാർത്താവായനമത്സരം ഇന്ന്

ആലപ്പുഴ ● മലയാള മനോരമയുടെസഹകരണത്തോടെപൊതുവിദ്യാഭ്യാസ വകുപ്പും സാമൂഹികശാസ്ത്ര കൗൺസിലും ചേർന്നു ഹൈസ്കൂൾ വിദ്യാർഥികൾക്കായി നടത്തുന്ന ജില്ലാതല വാർത്താവായന മത്സരം ഇന്ന് ആലപ്പുഴ ഗവ. മുഹമ്മദൻസ് ഗേൾസ് എച്ച്എസ്എസിൽ നടത്തും.

രജിസ്റ്റർ ചെയ്തവർ രാവിലെ ഒൻപതിനു സ്കൂളിലെത്തണം.സംസ്ഥാനതല മത്സരം ഒക്ടോബർ അവസാനവാരം മലപ്പുറത്തു നടക്കും.

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