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**[An Official News Magazine of  
Society of Pharmaceutical Education & Research™]**



**Dedicated to our Founder President  
[Society of Pharmaceutical Education & Research™]**



***Mrs. Sudha Nagaich***

***[15<sup>th</sup> February 1960-17<sup>th</sup> January 2013]***



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## Scope of the Journal

This Journal publishes original research work, reviews, short communications, case report, ethics forum, education forum and letter to editor that contribute significantly to further the scientific knowledge related to the field of Pharmacy i.e. Pharmaceuticals, Pharmacology, Pharmacognosy, Pharmaceutical Chemistry.

Journal of Advanced Pharmaceutical Technology & Research (JAPTR) hopes that Researchers, Research scholars, Academician, Industrialists etc. would make use of this journal publication for the development in the field of Pharmaceutical science and advanced technology related to Pharmacy profession.

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Society of Pharmaceutical Education & Research [SPER] had successfully organized its 4<sup>th</sup> Annual International Conference & Exhibition [SPER 2015] at DIT University, Dehradun [Uttarakhand] India on February 27-28, 2015. The inauguration ceremony commenced with lighting of the lamp by Shri Surendra Singh Negi, Hon. Minister of Health & Family Welfare, Govt. of Uttarakhand and other dignitaries followed by saraswati Vandana. The conference was inaugurated by Chief Guest Shri Surendra Singh Negi, Hon. Minister of Health & Family Welfare, Govt. of Uttarakhand, felicitation and address by Prof. K. K. Raina, Vice-Chancellor, DIT University, Dehradun, Dr. Upendra Nagaich, Secretary, Society of Pharmaceutical Education & Research [SPER] & Co-ordinator, Amity Institute of Pharmacy, Amity University, Noida, Prof. (Dr.) S. H. Ansari, Head, Dept. of Pharmacognosy & Phytochemistry, Jamia Hamdard, New Delhi, Prof. (Dr.) B. Mishra, Professor & Former Head, IIT-Banaras Hindu University, Varanasi, Prof. (Dr.) Heng Wan Sia Paul, National University of Singapore, Singapore, Mr. R. K. Jain, President & CEO, East African (India) Overseas, Dehradun and Prof. (Dr.) N. V. Satheesh Madhav, Director, Faculty of Pharmacy, DIT University, Dehradun.



Shri Surendra Singh Negi, Hon. Minister of Health & Family Welfare, Govt. of Uttarakhand emphasized on the

importance of research in pharmaceutical sciences in the state which is struggling with diseases like swine flu and dengue. He rued the fact that while the whole world is pursuing research in ayurvedic medicines, Uttarakhand which is known for its herbal wealth is still far behind in research and development in this area.

Dr. Upendra Nagaich, Organizing Secretary, SPER 4<sup>th</sup> Annual International Conference & Exhibition [SPER 2015] presented the annual report of SPER and introduced the delegates about SPER and various activities carried out by it across the country throughout the year. Moreover, he also shared the information regarding various privileges, grants and scholarships given to the students every year from SPER and about various awards given to the eminent persons and SPER life members every year i.e., Mrs. Sudha Nagaich Memorial Award, SPER Fellowship Award, SPER Eminent Teacher Award, Principal of the year, Young Scientist, Innovative Researcher, Young Teacher, Young Talent, Best Student for UG, PG, Ph.D. Scholar and SPER Women Forum awards.

Dr. Upendra Nagaich extended his special gratitude to Mr. Rajiv Kothiwal, Honourable Chancellor, IFTM University; Moradabad & Prof. (Dr.) R. M. Dubey, worthy



Vice-Chancellor, IFTM University, Moradabad for supporting SPER from the inception and being a mainstay

behind the success and various activities of the society. In the welcome address, Vice-Chancellor, DIT University highlighted the importance of drugs and role of pharmaceutical industry for the well being of patients.

Prof. Raina and Dr. Nagaich welcomed the Honorable chief guest and guest of honors with floral bouquets. The abstract book was released by chief guest and guest of honors.

The conference was in collaboration with DIT University, Dehradun [Uttarakhand] and Journal of Advanced Pharmaceutical Technology & Research [JAPTR] [The official Publication of SPER], along with IFTM University, Moradabad [Uttar Pradesh] as Knowledge Partner, Apeejay Stya University, Gurgaon as university partner and supported by IPA [Education Division], APTI, Bangalore, IPGA, New Delhi, IHPA, New Delhi and Society of Pharmacognosy, Bhopal and sponsored by Cadila Pharmaceuticals, Ahmedabad, Pharma Prammarsh, Rohtak and Bentham Sciences, United Arab Emirates.



Dr. Upendra Nagaich shared with delegates about the launch of SPER Maharashtra, Uttar Pradesh and Punjab State Branches in the year 2014. Dr. Nagaich discussed in detail regarding the privileges extended for the life members of Society of Pharmaceutical Education & Research [SPER] in the article processing charges (APC) for publication in Journal of Advanced Pharmaceutical Technology & Research [JAPTR].

Overwhelming response was received for the conference and more than 570 delegates from around 79 colleges (from 16 states) across the country and more than 35

delegates from Afghanistan, Malaysia, Singapore, Iran, Bangladesh, Iraq, Nigeria, Nepal, Pakistan were participated in the event with their innovative oral and poster presentations. More than 220 participants have presented posters of their research work in different tracks. All posters were judged by learned judges invited from various academic organizations and Pharmaceutical Industries.

The various scientific lectures were delivered by eminent personalities from academics as well as industry. The key speakers for this conference were Prof. (Dr.) S. H. Ansari, Head, Dept. of Pharmacognosy & Phytochemistry, Jamia Hamdard, New Delhi, Prof. (Dr.) B. Mishra, Professor & Former Head, IIT-Banaras Hindu University, Varanasi, Prof. (Dr.) Heng Wan Sia Paul, National University of Singapore, Singapore, Dr. Prakasham Reddy Shetty, Deputy Director & Principal Scientist, CSIR-IICT, Hyderabad and Mr. R. K. Jain, President & CEO, East African (India) Overseas, Dehradun.



This two day international conference was basically highlighted with an aim to provide an insight full regarding the present transforming global scenario and vital requisite to improve the level of pharmacy education that can rise up and keep a breath with standards of our speedy developing pharmaceutical industry.

The conference offered the common platform for interaction with the eminent academicians, research persons, and industry leaders. It provided an open forum for the professionals of pharmaceutical research and academician to enrich their knowledge.

The first day concluded with the cultural events performed by the young students of DIT University, Dehradun.

The second day of the conference commenced with the scientific lectures of Dr. Eswara Reddy, Joint Drug Controller [India], CDSCO, New Delhi and Dr. Prakasham Reddy Shetty, Deputy Director & Principal Scientist, CSIR-IICT, Hyderabad.

Dr. Eswara Reddy highlighted the current scenario of pharmaceutical industry along with the regulatory requirement. Dr. Reddy highlighted the vital role of pharmacists in the country and their contribution for the development of pharmaceutical society and health care system.

The valedictory function was inaugurated by Dr. Eswara Reddy, Joint Drug Controller [India], CDSCO, New Delhi and the SPER awards was given by Dr. Eswara Reddy, Joint Drug Controller [India], CDSCO, New Delhi, Dr. Upendra Nagaich, Secretary, Society of Pharmaceutical Education & Research [SPER], Prof. K. K. Raina, Vice-Chancellor, DIT University, Dehradun, Mr. R. K. Jain, President & CEO, East African (India) Overseas, Dehradun and Prof. N. V. Satheesh Madhav, Director, Faculty of Pharmacy, DIT University, Dehradun.



During the conference, Mr. Tarsem Jain, Editor, Pharma Prammarsh was honored with 'Mrs. Sudha Nagaich Memorial Award' for his immense contributions towards the upliftment of pharmacy profession.

SPER Fellowship award was conferred upon Prof. (Dr.) Satish Sardana, Principal, Hindu College of Pharmacy, Sonipat & Mohd. Rageeb Mohd. Usman, Smt. S. S. Patil

College of Pharmacy, Chopda for their active involvement and contribution in the various activities of SPER throughout the year.

SPER Eminent Teacher Award was conferred upon Dr. Prakasham Reddy Shetty, Deputy Director & Principal Scientist, CSIR-IICT, Hyderabad & Prof. (Dr.) Ranjit Singh, Director, Govt. College of Pharmacy, Rohru for the outstanding contribution in the field of pharmaceutical education.

SPER Principal of the year Award was conferred upon Prof. (Dr.) B. Mishra, Head, IIT-Banaras Hindu University, Varanasi for the outstanding contribution towards uplifting the standards of pharmaceutical education.

SPER Young Scientist Awards were conferred upon Dr. Yasir Hassan Siddique, Aligarh Muslim University, Aligarh and Dr. Madan Mohan Gunda, SRR Govt. Degree & PG College, Karimnagar.

SPER Innovative Researcher Award was conferred upon Dr. Virendra Kumar Tiwari, Dabur Research Foundation, Ghaziabad.

SPER Young Teacher Award was conferred upon Dr. Shiva Krishna Pabba, St. Peter's College of Pharmacy, Warangal and Mr. Anshu Gupta, Swift School of Pharmacy, Rajpura.



SPER Young Talent Award was conferred upon Mr. Bharat Vijaykumar Jain, Smt. S. S. Patil College of Pharmacy, Chopda and Mr. Sunder Singh, IPS College of Pharmacy, Indore.

SPER Best Student Awards (Ph.D., PG, and UG) were conferred upon Mr. Sundeep Chaurasia, Dept. of Pharmaceutics, IIT-BHU, Varanasi, Mr. Vaibhav Mangalrao

Darhekar, P. Wadwani College of Pharmacy, Yavatmal, Mr. Kuldeep Singhal, Sardar Bhagwan Singh PGIBSR, Dehradun, Mr. Ashish Kumar, Amity University, Noida, Mr. Shrey Bhargava, Chitkara College of Pharmacy, Rajpura respectively.

SPER Women Forum-Innovative Researcher Award was conferred upon Prof. (Dr.) Anupama Diwan, Apeejay Stya University, Gurgaon, SPER Women Forum-Young Scientist Award was conferred upon Ms. Sarita Kumari Yadav, Dept. of Pharmaceutics, IIT-BHU, Varanasi, SPER Women Forum-Young Teacher Award was conferred upon Dr. Ginpreet Kaur, SPP SOP Tech. (NMIMS), Mumbai and SPER Women Forum-Best Student Award was conferred upon Ms. Charu Bharti, Venkateshwara College of Pharmacy, Meerut.

SPER Best State Branch award was conferred upon Maharashtra State Branch for their continuous involvement and development of SPER in the state.

SPER Best Oral Presentation Awards were conferred upon Dr. Ginpreet Kaur and Dr. Yasir Hassan Siddique and given by Prof. Ranjit Singh, Prof. Parveen Bansal and Dr. Upendra Nagaich.

To encourage and motivate the students 05 Best Poster Presentation Awards were given in each discipline by Mr. Tarsem Jain, Prof. Heng Wan Sia Paul, Prof. B. Mishra, Dr. Prakasham Reddy Shetty, Prof. Satish Sardana and Dr. Upendra Nagaich respectively.

Prof. (Dr.) N. V. Satheesh Madhav, Chairman-Local Organizing Committee of the conference presented the vote of thanks.



# SPER SPONSORED NATIONAL SEMINAR AT BCPSR DURGAPUR [WEST BENGAL]

Society of Pharmaceutical Education and Research, [SPER] has organized the SPER sponsored national seminar at Bengal College of Pharmaceutical Sciences and Research, Durgapur, West Bengal on April 11, 2015. This national seminar was organized with an aim to intact the commitment of SPER towards development of pharmaceutical education and research across the country.

The objective of this National Seminar was to bring together academicians, researchscholars, students & industrialists under a common platform to enlighten on "Emerging trends & Innovation in Pharmaceutical Education & Research in India" in divergent fields of Pharmaceutical Education & Research.



The event was attended by many luminaries like Dr. Hemanta Kumar Nayak, an interventional pediatric cardiologist, The Mission Hospital, Durgapur, Prof. (Dr.) S.H. Ansari, Former Dean, Faculty of Pharmacy, Jamia Hamdard, Hamdard University, New Delhi, Dr. Subash C. Mandal, Vice President, Indian Pharmaceutical Association, Mumbai and Deputy Director, Directorate of Drug Control, West Bengal, Dr. TuhinadriSen, Associate Professor, Department of Pharmaceutical Technology, Jadavpur University, Kolkata Prof (Dr.) A.C. Ganguly, Group Director, SKS group of Institutions, Durgapur, Prof S.K.

Brahmachari, Dean and Former Principal, Bengal College of Engineering and Technology, Durgapur and Prof (Dr.) Amitava Ghosh Principal and Chairman of the Organizing Committee of the Seminar at Bengal College of Pharmaceutical Sciences & Research.

The speakers urged on the need for keeping pace with the latest innovations in the field of Pharmaceutical Sciences through their speech within the august gathering. The event also featured a poster presentation session. The agenda of the seminar was based on the premise that the pharmaceutical industry will continue to witness major changes and challenges. Rapid development of the emerging markets, progress in drug research, the rise in generics production, the availability of high-potency drugs and innovations in manufacturing processes will sustainably modify the global pharmaceutical landscape. In view of this, the seminar definitely will create synergies between industries & research institutions as it will bring together leading experts & thinkers to a common dais, resulting in a rich, rewarding exchange of views & experiences.

The event was attended by students and scholars from different educational and research institutions throughout India. The proceedings of the seminar concluded with the valedictory session of the event with the investiture ceremony and a vote of thanks proposed by Mr. Sajal Kumar Jha, organizing secretary of the event.

Dr. Upendra Nagaich, Secretary, Society of Pharmaceutical Education & Research [SPER] congratulated Prof. Amitava Ghosh and his team for their consistent support and dedication for the grand success of this event.

# Summit on “India: The Future Global Healthcare Hub” 1<sup>st</sup> May 2015 at PHD House, New Delhi

Foreign Trade & Investment Committee and Health Committee of PHD Chamber of Commerce and Industry jointly organised the Summit on “India: The Future Global Healthcare Hub”, with the support of the Ministry of External Affairs, Government of India, on 1<sup>st</sup> May 2015 at PHD House, New Delhi.

H.E. Mrs. Gennet Zewide, Ambassador of Ethiopia to India was the Chief Guest in the Inaugural Session.

H.E. Prof. Sudharshan Seneviratne, High Commissioner of Sri Lanka to India was the Chief Guest at the Valedictory Session.

Around 150 representatives from the industry, including 20 diplomats, participated in the event.

Mr. Saurabh Sanyal, Secretary General, PHD Chamber welcomed guests and stated the increasing consciousness about healthcare amongst Indians pertaining to factors like increase in population and phenomenal increase in per capita income. He requested the guests to observe a two minutes silence for the victims in the Nepal earthquake and requested the participants to come forward and contribute generously

The Inaugural Session was presided over by Mr. Sanjeev Sardana, Chairman, International Affairs Committee for Africa, PHD Chamber. Mr. Sardana mentioned about the increasing role of the healthcare sector in the Indian economy generating both revenue and employment. He said that India is now becoming a preferred medical destination for patients from Africa and Asia, prime reasons being the availability of well trained medical professionals and cost effectiveness. He also mentioned that to maintain the current position the sector needs to cater to problems like visa issues, lack of proper SOPs for patient care, quality and hygiene concerns, lack of post treatment care to the patients.

Mr. Nishant V. Berlia, Chairman, Health Committee, PHD Chamber in his theme presentation highlighted that due to certain advantages of highly skilled doctors, reduced costs, low waiting periods, better services and increased compliance to international quality standards, India is moving to become one of the most preferred destinations for healthcare services and medical wellness. He talked about the initiatives taken by the Government as well as the private sector in promoting this sector.



While addressing the Inaugural Session, H.E. Mrs. Gennet Zewide complimented the Indian Healthcare sector on their becoming one of the preferred medical destination for patients around the world. She mentioned that patients from Ethiopia have now shifted to India from countries like South Africa and Thailand, the reasons being well trained medical professionals, updated technology and cost attractiveness. She discussed that although India is the preferred destination for patients from Ethiopia, the major concern is the lack of a formally organised body that can eliminate the hassles linked with intermediaries and medical brokers. Other issues included inflated billing mechanism, charging heavy facilitation costs, trust issues, information mismatch and absence of a proper follow up mechanism.

She suggested setting up a legal body that would take care of the patients needs upon arrival in a transparent manner. She said that many patients travel from Ethiopia and other African countries for super critical care facilities. She indicated that Ethiopia would offer 100% FDI benefits for Indian professionals that intend to explore the country for setting up of hospitals and other healthcare facilities with concessional land and incentives including tax schemes to suitably protect the Indian investments in the health sector.

Mr. Vivek Seigell, Senior Secretary, PHD Chamber thanked Her Excellency Mrs. Gennet Zewide, Ambassador, Embassy of Federal Democratic Republic of Ethiopia for bringing out critical points which can serve as direction for the conference in next technical sessions and can also act as future action points for the chamber and the Government. He emphasized on India – the Future Global Healthcare Club, should not be confused with Medical Tourism as when a patient comes for a surgery it is anything but tourism. He also talked about the importance of leap of faith the patient takes when he/she comes to a foreign country for treatment and it is the country's responsibility to fulfil their expectations.

At the Valedictory Session: Future of Ayurveda, Yoga, Unani, Siddha and Homeopathy (AYUSH) & Industry Perspective for Promoting its Global Access, Mr. Sanjay Aggarwal, Chairman, Foreign Trade & Investment Committee, PHD Chamber, while welcoming the Chief Guest, H.E. Prof. Sudharshan Seneviratne, High Commissioner of Sri Lanka., said that other countries can avail India's knowledge of Ayurveda since India has a long history and strong base of Ayurveda and is gaining attention of a lot of other countries. Mr. Aggarwal reiterated that there is a need to harness the area of Ayurveda, Yoga, Unani, Siddha and Homeopathy due to its proven benefits and cost-effective solutions and that the need of the hour is international recognition of Ayurveda as a system of medicine with an independent status, for which emphasis must be laid on developing a system where documented proof of alternative medicines is recorded over a period of time in order to ensure authenticity.



While addressing the Valedictory Session, Mr. Pradeep Multani, Chairman, Committee on AYUSH, PHD Chamber talked about the due importance of Ayush industry in making India a global healthcare hub. He emphasized on upgrading education level in the sector with special attention to designing intervention globally. He stressed on the importance of integration of Ayush in National Health Mission. He talked about the importance of Ayurveda in India and international market. He also stressed on the export of Ayurveda and tradition medicine and its contribution to national exchequer.

H.E. Prof. Sudharshan Seneviratne, High Commissioner of Sri Lanka to India emphasised on the importance of sustainable tourism development and suggested that countries within the ambit of SAARC should look for sustainable tourism development by identifying world heritage sites within their geographical boundaries, as it would save us also from possible and predictable natural disasters. He shared that Sri Lanka has developed Nurseries at world heritage sites which are nurtured with the help of Ayurvedic doctors and that this area of cooperation is ought to be explored with utmost priority. Sri Lanka has been doing this and would want other SAARC countries to follow suit. The High Commissioner also pointed out that the systems of medication, surgical instruments and hospitals have already been explained by learned scholars in the past and one can draw a lot about the concepts of healthy living and cleanliness from the ancient times. He talked about the importance of social medicine and how social and economic conditions impact health.



The Summit was concluded with a vote of thanks by Mr. Sastry, Co Chairman, Committee on AYUSH, PHD Chamber to the Chief Guest, Ambassadors, speakers and delegates.

## PHARMA JOB FAIR IN EASTERN INDIA ORGANIZED BY BENGAL COLLEGE OF PHARMACEUTICAL SCIENCES & RESEARCH, DURGAPUR



Bengal College of Pharmaceutical Sciences & Research, Durgapur established in the year 2008 by SKS Educational and Social Trust, recently organized the first ever 'Pharma Job Fair' an event which is unique and has few parallels in Eastern India in the profession of Pharmacy. The job fair was organized on the 7<sup>th</sup> of June, 2015 at St. Xavier's College, Kolkata with the aim to envisage a new dimension to the current Pharmaceutical education scenario and add a new paradigm in the placement roadmap for the upcoming students taking up a career in the pharmaceutical and healthcare sector. The job opportunities scenario for a pharmacist are manifold and include jobs in diverse sectors such as Packaging, Pharmaceutical Sales Management, Quality Assurance & Quality control, Regulatory Affairs, Manufacturing, Hospital Pharmacy, Research & Development, Pharmaceutical Product Management, Clinical Research, Retail chain stores etc. In the job fair organized by the institute at St. Xavier's College, Kolkata, more than 180 students from all over the country and 16 companies recruiting from the event. This event was conceptualized by Bengal College of Pharmaceutical Sciences & Research, Durgapur and was successfully conducted to take care of the needs of the skilled students of Pharmacy in getting jobs in different sectors of Pharmacy. Many of the students have been selected from the event to pursue jobs in these companies after completion of their respective course curriculum in the discipline.

A three-day workshop i.e. 5<sup>th</sup> to 7<sup>th</sup> April 2015 entitled Quality Improvement Programme on Training Teachers for Tomorrow's Need was organised by Association of Pharmaceutical Teachers of India-HP State Branch in association with Laureate Institute of Pharmacy, Kathog, Jawalaji and Himachal Pradesh Technical University, Hamirpur, Himachal Pradesh.

The Workshop was undertaken as a part of Quality Improvement Programme aimed at strengthening teaching and assessment skills of the teachers.

This workshop aimed at improving the teaching/assessment skills of the teachers. The purpose of the course was to train all the staff of the pharmacy institute's situated in Himachal Pradesh to improve confidence, comfort and enthusiasm in their profession.

The workshop was held at the Conference Hall of Laureate Institute of Pharmacy. The venue was suitable for the training and service was good.

The workshop was inaugurated by chief guest Mr. Manoj Kumar (HAS), Registrar, Himachal Pradesh Technical University. The guest of honor for the day was Dr. Ran Singh, Managing Director, Laureate Institute of Pharmacy, Dr. Ranjit Singh, President, HP-APTI, Dr. L Raju, Vice President, HP-APTI and Dr. M S Ashawat, Principal, Laureate Institute of Pharmacy. Dr. Kusum Devi acted as Facilitator of the workshop.

Dr. M. S Ganachari, Dr. N.N Sharma (Dean, HPTU), Dr. R.S Thakur, Dr. Rashmi Ramaul and Dr. V. Kusum Devi have acted as resource persons along with the facilitators. Dr. Vinay Pandit and Dr. Dharmendra Kumar acted as co-ordinators of the event

The course was divided into two main parts: 1) An introduction to how to apply teaching/learning skills in effective teaching and practicing it by delivering

micro teaching sessions and 2) Evaluation methods of learning outcome.

15 participants have participated in the workshop. Participants' teaching/ learning skills was evaluated before the workshop by administering a pre-test questionnaire. Most of the participants were not familiar with the skills prior to attending the course.

The participants are divided into 4 groups and each group was given different group tasks relevant to the sessions and one representative of the group presented their report on the group tasks after discussing with the peers. The groups were shuffled after each session.



On Day 1 participants learnt what the educational objectives are and why they are important. They are introduced to basic terminologies such as knowledge, attitude and skills, given guidance on different taxonomic domains, lesson plan etc., and group work on educational objectives.

In the afternoon the session on Teaching Learning Tools & media allowed the participants to become familiar with modern tools employed in effective classroom teaching. Further the participants are also exposed to Objective Structured Practical Exam (OSPE) as a learning tool. During this session, on the basis of various problems associated with practical examination especially in terms

of their outcome, participants are exposed to the method which has specific objective, reliability, validity, with little or no examiner bias, accepted by students and stakeholders and is able to measure outcome competencies and skills in a better way.

On Day 2 Morning session started with a talk on effective teacher and their skills. The participants understood that teacher preparation/knowledge of teaching and learning, subject matter knowledge, experience, and the combined set of qualifications measured by teacher licensure are all leading factors in teacher effectiveness.

The participants were exposed to scientific writing session, evaluation techniques and group tasks on long essay type, short essay and short answer questions.



On Day 3 of the workshop participants had a grasp of teaching/learning skills and evaluation methods of learning outcome. The focus then turned to how to use the learnt techniques in classroom teaching. Most of the participants already had training experience. So a short review of facilitation skills, presentation skills and Adult Learning Principles prepared by them for delivering 'A microteaching practice session' in 5-minute presentation was conducted for all the participants individually in four groups. After delivering the presentations, the presenters receive feedback in four ways: from the students, from their peers, from the facilitator and by self-evaluation of their own presentation immediately after delivering their session. This was done to prepare the participants to become effective trainers. The participants were told

about various funding agencies and the ways how one can write an effective research proposal for funding. The participants were also exposed to ethics involved in publishing a research paper or review paper by presentation on plagiarism.

The afternoon of Day 3 was focused on Item analysis and group tasks on item analysis and interpretation of data. The participants were exposed to debate session on Modern Teaching Tools-Boon or Bane. The debate has helped the participants in improving their analytical and communicative skills.

Evaluation of the course was done after every session. On 2<sup>nd</sup> and 3<sup>rd</sup> day, the first session of every morning started with review of the previous day sessions by the facilitator. The facilitator was able to identify what points came across and other areas where points could be re-emphasised during the course of the day.

On Day 3 of the workshop, representatives from the participants gave the feedback as the workshop review which helped to refresh participants' memories of the all three days and gave the facilitators more formal evaluation feedback

Participants said that the lecture sessions, materials and group works were the most useful aspect of the workshop. As none of the participants had underwent such training previously, participation in TOT workshop was the most useful part. Participants also felt that practicing delivering micro teaching presentations and receiving feedback in four ways including self-evaluation was the most useful part of the workshop. Other useful areas included group tasks on evaluation methods and construction of questions.

Most of the comments were positive such as: "best facilitators ever", "well-prepared and professional workshop", "excellent" and "most demanding, but enlightening workshop. Several participants verbally expressed the need for follow-up support through such workshops in future.

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# *SPER Women's Forum (Women's Division)*

SPER-WF is an international forum for Women's across the Pharmacy profession under the aegis of Society of Pharmaceutical Education & Research [SPER].

**A woman is the full circle. Within her is the power to create, nurture and transform-Diane Mariechild.**

The SPER-WF advances research across careers, cultures and continents by connecting the world's most preeminent women of significant and diverse achievement. The SPER-WF brings together an unprecedented global membership to exchange ideas, to learn and inspire, and to promote better research and development for a changing world.

It contributes to improve the status of Pharmacy profession as well to fuel the potential of recent graduates and young pharmacists, as enthusiastic agents of professional and social change while abiding the highest professional and ethical standards.

We advance women's leadership through our core concept which provides personal and professional enrichment to our members. The society expands and extends the contribution of women leaders through participation in various research and development activities.

The SPER WF Annual award is a unique initiative to encourage women to explore and fulfill their potential through the pursuit of research in education and to enhance their capacities to provide productive and supportive service to field of Pharmacy profession.

## **Aims & Objectives:**

1. Undertakes action research directly contributing to women's mobility, capacity building, leadership skills, entrepreneurship, empowerment etc.
2. Collaborates with other organizations working for the cause of gender equality and women empowerment.
3. Builds Capacity the women and girls focusing on literacy, education, widening opportunities for employment, training etc.
4. Provides consultancy to various institutions working with women and child development.

## **The SPER-WF Mission**

To enable all women pharmacists to realise their full potential and raise their profile by being educationally and socially active.

## **SPER Women's Forum [Women's Division] Council**

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**LATE MRS. SUDHA NAGAICH**

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# SPER

Women Forum  
[SPER-WF]

Awards



### SPER-WF Eminent Teacher Award

SPER-WF eminent teacher award is a prestigious award given to a women member of the Society who has made distinguished / outstanding contribution towards the advancement of pharmaceutical education and the activities of SPER.

The SPER-WF eminent teacher award should include the certificate and the memento.

### SPER-WF Young Scientist Award

SPER-WF young scientist award is a prestigious award given to a women member of the Society who has made distinguished / outstanding contribution towards research & development and the activities of SPER.

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### SPER-WF Innovative Researcher Award

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The SPER-WF innovative researcher award should include the certificate and the memento.

### SPER-WF Young Teacher Award

SPER-WF young teacher award is a prestigious award given to a women member of the Society who has made distinguished / outstanding contribution towards pharmaceutical education & research and the activities of SPER.

The SPER-WF young teacher award should include the certificate and the memento.

### SPER-WF Best Student Award

SPER-WF best student award is a prestigious award given to a student women member of the Society who has made outstanding performance throughout the year and the activities of SPER.

The SPER-WF best student award should include the certificate and the memento.

### Eligibility Criteria

The nominee should be a life member of the society.

### Nomination Procedure

Each year the Hon. Secretary shall publish a NOTICE inviting nominations from the Members of the Society. The Notice inviting nominations shall also be published on the official website of SPER.

### Selection Procedure

The Hon. Secretary shall send copies of all nominations received to all members of the CEC to evaluate the nominations and on the basis of the recommendation received by the CEC members. The Hon. Secretary of SPER shall announce the names of Awardees at the meeting of the CEC. The decision as announced by the Hon. Secretary shall be final, conclusive and binding. NO correspondence will be entertained nor any clarification be furnished to the nominator and / or nominee.

### CONTACT US:

**The Secretary**  
**SPER Women's Forum**

[Society of Pharmaceutical Education & Research]  
22-C, Jawahar Colony, Kampoo  
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E-mail: [sperwomenforum@sperpharma.org](mailto:sperwomenforum@sperpharma.org)  
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# Green Chemistry: A Contemporary Approach in Pharmaceutical Education and Research

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### 1. INTRODUCTION

The chemical reactions are essential for the generation of huge number of compounds which are widely employed in the synthesis of medicines, as well as production of other pertinent materials like dyes, paints, plastics, cosmetics, agrochemicals and others. The danger accompanying with chemicals and chemical reactions motivated chemists to develop methodologies and formulate approaches to carry out chemical reactions in a safe and environmentally gentle manner.

Green chemistry is the practice of chemical science in a manner that is sustainable, safe, non-polluting and that consumes minimum amounts of materials and energy while producing little or no waste material.<sup>1</sup>

### 2. PRINCIPLES OF GREEN CHEMISTRY

In 1997, Paul Anastas and John C. Warner<sup>2</sup> established 12 principles of green chemistry are as follows:

- (i) Prevent the development of waste material.
- (ii) Chemical products - efficacy of function should be preserved.
- (iii) Synthetic strategies - use and produce substances with little or no toxicity to environment and human health.
- (iv) Synthetic methods with integration of all materials employed in the method for production of final product.

- (v) The starting material should be reusable.
- (vi) Synthesis should be performed at optimum temperature and pressure.
- (vii) Use of supporting substances like solvents, separation agents, etc. should be avoided.
- (viii) Use reagents in a chemical reaction with lesser potential for chemical mishap, including releases, fires and explosions.
- (ix) Analytical checks in synthesis for real-time, in-process monitoring and control over production of harmful substances.
- (x) Final products/chemicals do not remain in the environment and split into safe decomposition products.
- (xi) Catalytic reagents should be preferred as they are better to stoichiometric reagents.
- (xii) Unnecessary derivatization should be avoided if possible.

### 3. MEDICINAL AND PHARMACEUTICAL EXAMPLES

In last decade, lot of examples has appeared for synthesis of medicinal compounds while employing green chemistry. Phosphoramidite-based, solid-phase synthesis of antisense oligonucleotides has been altered to incorporate the principles of green chemistry by reducing the use and generation of harmful substances with possibility for reuse of costly reagents. The green synthesis for a key intermediate of atrovastatin includes the application of biocatalyst like ketoreductase, glucose



dehydrogenase, halo hydrin dehalogenase. The synthesis of aspirin with microwaves using catalysts such as  $\text{AlCl}_3$ ,  $\text{H}_3\text{PO}_4$ ,  $\text{CaCO}_3$ ,  $\text{NaOAc}$ ,  $\text{Et}_3\text{N}$  and solvent-free approach have been developed. These studies represents a novel substitute and greener approach for traditional synthetic methods.<sup>3-5</sup>

## CONCLUSION

Green Chemistry essentially involves design, development and practice of chemical products and processes permitting the scientists to protect and benefit the economy, human beings and the environment. Green Chemistry should be part of educational programs/projects, such as curriculum materials, teacher training, targeted funding. Actually, the winds of transformation

have already commenced blowing and the majority of researchers, teachers and chemical technologists will like to appreciate and employ the values of green chemistry in innovation, application and teaching.

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# *JAPTR Most Cited Article Award*

The JAPTR most cited article award was created by the central executive council (CEC) members to recognize and support research based on citation analysis by encouraging and assisting individuals in the field of pharmacy, medical and allied sciences with their research. Citation analysis is broadly defined, including but not limited to analysis using resources developed by Thomson Reuters. Because of the limits proposed by timing considerations, the award may be made for top three cited articles. Researchers will be selected to receive citation awards in recognition of their outstanding contribution to research. JAPTR most cited article award is a prestigious award given to the corresponding author who has published the article in Journal of Advanced Pharmaceutical Technology & Research [JAPTR]. Each year, the award will be given in the annual conference of "Society of Pharmaceutical Education & Research" [SPER]. The award is given on the recommendation of the CEC.

## **Eligibility Criteria for JAPTR most cited article award**

The awardee should be the corresponding author of an article published in JAPTR.

## **Selection Procedure**

The Hon. Secretary, SPER along with the Executive Editor, JAPTR will consider all the articles published in JAPTR along with their citations and The Hon. Secretary of SPER shall announce the names of Awardees at the meeting of the CEC. The decision as announced by the Hon. Secretary shall be final, conclusive and binding. NO correspondence will be entertained nor any clarification will be furnished to the authors.

The JAPTR most cited article award should include the certificate and the memento.





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## OBJECTIVE

- The objectives of the society are cultivation and promotion of the study and practice of Pharmaceutical/Medical/Allied sciences education & research.
- To promote social contacts among pharmacists of the country.
- To undertake and promote scientific and pharmaceutical research activities related to pharmaceutical education & research.
- To edit and publish, research journals related to the field of pharmacy for nourishing, spreading and promoting the research scholar and academicians.
- To arrange seminars, symposia, conferences, lectures and exhibitions to focus on pharmacy profession through publications.
- To provide a platform to discuss various issues related for the growth and development of pharmacy profession.
- To honour eminent academicians, researchers and young scientists engaged for the upliftment of pharmacy profession.

## VISION :

To promote research in pharmacy and allied disciplines, with particular reference to the current development in the field;

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