



55th Annual Convention of Indian Society of Agricultural Engineers

on

*Challenges and Technological
Solutions for Ensuring Food,
Water and Energy Security*

International Symposium

on

*Emerging Trends in Agricultural
Engineering Education,
Research and Extension*



November 23-25, 2021
Venue: Patna, Bihar

Through Dual Mode: Online/Offline

Organized by
Indian Society of Agricultural Engineers
New Delhi

&

Dr. Rajendra Prasad Central Agricultural University
Pusa, Samastipur, Bihar



ISAE Convention

The Indian Society of Agricultural Engineers (ISAE) was established in 1960 with an objective to strengthen the profession by bringing together agricultural engineers of the country on one vibrant platform. The society has played a vital role in developing well-defined linkages between agriculture sector and industry and has facilitated in broader participation of its members in professional activities so as to give a boost to the agricultural production and post-production sectors. The Agricultural Engineers have been immensely contributing in the field of farm mechanization, irrigation, drainage, soil-water conservation, watershed management, flood and water control systems, command area development, post-harvest management, agro processing and value addition, managing agricultural structures, environment control, renewable energy generation and other domains directly associated to agricultural productivity and farmers' income.

Indian Society of Agricultural Engineers with a mandate to organize regional, national and international meets and Annual conventions of the society enable multiple stakeholders, national and international experts to discuss challenges and opportunities in the research, education, extension, industry, employment, and other relevant aspects of agricultural engineering. The recommendations and resolutions adopted during these events guide Government agencies and industry bodies. The ISAE Annual Convention provides an excellent platform for interactions, deliberations, exchange of ideas, collaborations, and networking opportunities with experts and stakeholders in the world's fastest-growing economy. ISAE has been playing very important role in ASABE's global partnership to provide engineering and technological solutions toward creating a sustainable with abundant food, water, and energy and a healthy environment. The global water security conference for agriculture and natural resources, organized jointly by ISAE and ASABE at Hyderabad 3-6 Oct 2018 was a big leap in this regard. Very successful organization of 8th Asia -Australasian conference on precision agriculture at PAU Ludhiana October 14-18, 2019 and entering in MOU with four International Agricultural Engineering Societies of Korea, Malaysia, Nigeria and Nepal are some testimonials of ISAE's commitment to "go grass root as well as global to make best use of local resources" approach. This will help strengthening national's call of Atmanirbhar Bharat.

Dr. Rajendra Prasad Central Agricultural University is a pioneer institution of agricultural education & research. With the enactment of Dr. Rajendra Prasad Central Agricultural University Act, 2016, with effect from 7th October, 2016, the erstwhile Rajendra Agricultural University, Bihar, Pusa (Samastipur) is converted into Dr. Rajendra Prasad Central Agricultural University.

The College of Agricultural Engineering was established in 1983 for to give the much needed impetus for agricultural development in the state through education, research and transfer of technologies related to agricultural engineering. The college offers under graduate course in Agricultural Engineering, M. Tech. and PhD programme in all three disciplines- Farm Machinery & Power Engineering, Processing & Food Engineering and Soil & Water Engineering.

- The 55th Annual Convention of ISAE will be organized during 23-25 November 2021 in Patna jointly by ISAE, New Delhi and Dr. Rajendra Prasad Central Agricultural University (RPCAU), Pusa, Samastipur, Bihar. The water-food-energy nexus is a core issue to a sustainable development. Demand for all three is increasing, driven by a rising global population, rapid urbanization, changing diets and economic growth. The interdependencies of water, energy and food production aim to systemize the interconnections to provide a framework for assessing the use of all available resources for enhancing resource use efficiency, reducing environmental impacts, tapping synergies and co-benefits. Therefore, the theme of the 55th Annual Convention of ISAE is decided as ‘Challenges and Technological Solutions for Ensuring Food, Water and Energy Security’. This convention theme is a continuation of the ‘Agricultural Engineering Technologies for startups’ theme of the 54th Annual PUNE Convention organized by Dr. Annasaheb Shinde College of Agricultural Engineering and Technology, Mahatma Phule Krishi Vidyapeeth, Rahuri, Maharashtra.
- Agricultural Engineering program call for an innovations and curriculum development for Agricultural Engineering education and research in India. The aspects of curriculum process such as policy, analysis, objectives, content, evaluation methodology and implementation needs to be revitalized for further strengthening the profession. Discussion, recommendations and deliberations on such issues can help frame strategies for the development of education in line with modern trends in curriculum issues. An International Symposium on ‘Emerging Trends in Agricultural Engineering Education, Research and Extension’ will be organized in association with Centre for Excellence on Climate change and ADMI, UIUC, USA and other national and international institutions.

Theme of convention

The theme of the convention is ‘Challenges and Technological Solutions for Ensuring Food, Water and Energy Security’.

The issues and challenges in the food, water, and energy sectors are **indissolubly tied and require an multifaceted approach to ensure their availability , security and sustainability**. The nexus approach between food-water-energy to harmonize technologies can provide a framework for better understanding the interdependencies of the food, water, and energy sectors for intersectorally integrated technological solutions.

The solutions for food, water, and energy security is not only to enhance productivity, conserve resources and create energy, but to build climate resilient agriculture, reduce pollution/ emissions; reduce post-harvest losses, preserve natural resources and develop solutions in anticipation of future climate change impacts. A technological solution with informed and transparent framework can meet increasing global demands without compromising sustainability. Integrated technical interventions, planning and management of the trio can provide an adequate amount of food and nutrition, access to green energy, safe water and sanitation which will also allow decision-makers to develop appropriate policies, strategies and investments. An active participation in the upcoming ISAE convention with the theme ‘**Challenges and Technological Solutions for Ensuring Food, Water and Energy Security**’ may facilitate the researchers, academicians and technocrats to work on their innovative ideas pertaining to smart agriculture practices; precise and automated control of irrigation management systems; postharvest management of crops for quality and safe food and development of energy efficient farm power machinery tools and equipments.

Theme of International Symposium

The theme of the international of international symposium is '***Emerging Trends in Agricultural Engineering Education, Research and Extension***'

Engineering is a global industry undergoing an unprecedented change and Agricultural Engineering stream is not an exception. Agricultural engineering program represents a unique component of education, research and extension. The program focuses on conceptual knowledge in the fields of bio-science, allied sciences, mathematics, engineering and technology while research emphasizes application of the attained knowledge on research, innovations, reforms, implementation and technology dissemination.

The perspective of agricultural engineering is framed by global forces such as the impacts of globalization, rapid technology advancements, climate change, epidemic and social/economic inequality. Engineering education needs to constantly strive to keep pace with the changes for the contribution of agricultural engineers to these global opportunities, rapid change, uncertainty, complexity and challenges. Recent policy changes, Covid-19 situation and more dependency on agriculture have forced us to return back to local resources and solutions.

Innovations and curriculum development in agricultural engineering subject requires professional development around the concept of the 'global engineer but local priorities' incorporating links with existing initiatives on sustainable development and internationalization. There is a need to undertake a review of existing course components, its deliverables and extent of impacts to which the global dimension is adequately reflected through the present curriculum. With developments of information technology, there exists opportunities for course developers to introduce innovative teaching and learning methods based on active and flexible learning approach. The new methodologies can transform the teaching for the faculty, instructors, researchers, experts, extension workers and students to rethink the pedagogy and design resources, programs and courses that can benefit from new approaches.

Scientific sessions and call for papers

Scientific sessions will include lead papers as well as keynote addresses by national and international experts on the subject. Original research work will also be presented in oral and poster paper sessions. Soft copies of abstract of the paper(s) shall be submitted to respective Technical Directors by August 30, 2021. The abstract should be of approximately 200-300 words in length, single spacing, MS Word document, Times New Roman Font with 12 Font size. Technical Directors will decide on the papers to be presented during oral sessions or through a poster presentation. After receiving the acceptance, full-length paper for oral presentation should be e-mailed to the respective technical directors.

The participants shortlisted/identified for oral presentation will have to send their RECORDED presentation (only MS PowerPoint) with clear audio. The recorded presentation required to be submitted to the Technical Directors by October 10, 2021. The duration of the recorded presentation should be not more than 8 minutes. Detailed guidelines for oral as well as poster presentations are available on the ISAE and Convention web site. The certificates will be issued to participants for attending the convention (without oral/poster presentation) and presenting the paper in session (oral/poster presentation).

Conference Registration

- All participants should register for the conference by filling-up there registration form which is given separately with the brochure and is also available on the conference website: <http://www.rpcau.ac.in/isaer2021/>. Registration fee is to be paid in advance. The details of registration fee for different categories of participant are given below.

Offline participants	Amount	Online participants
ISAE member	:7000 INR	1000 INR
Non-member	:8000 INR	
SRF/JRF/SRA/RA/Ph.D. Research Scholar*	:4000 INR	
Students (ISAE Members)#	:3000 INR	
Accompanying person	:2000 INR	

Mode of Payment

Name of bank – Punjab National Bank Branch- Pusa

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- Those who are not ISAE member may become member before convention or on spot. . All students should attach their certificate from Dean/ Associate Dean/ Head of the Department along with their Identity Cards.
- Abstract submission** : **August 30, 2021**
- Letter of acceptance to authors** : **September 10, 2021**
- Submission of full length paper** : **September 25, 2021**
- Final manuscript submission to convener by concern Technical Directors** : **October 10, 2021**
- Official Language** : **English**
- For any other inquiry kindly contact** : **isaerpcau2021@rpcau.ac.in**

Contact details of Technical Directors are as follows:

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About the University: Dr. Rajendra Prasad Central Agricultural University

Dr. Rajendra Prasad Central Agricultural University, Pusa, established on 7th October, 2016, owes legacy of Rajendra Agricultural University, Pusa (1970) and Agricultural Research Institute (1934) and Imperial Agricultural Institute, Pusa (1905). The jurisdiction and responsibility of the University with respect to teaching, research and extension in the field of agriculture and allied subjects is to extend in the whole country and with special reference to the State of Bihar. The university includes six constituent colleges, five agricultural research stations, six centre of research excellence and sixteen Krishi Vigyan Kendras (KVKs) spread over Bihar. The main campus of RPCAU is located at Pusa, district Samastipur, Bihar. The university provides quality education both at UG and PG levels.

About College: College of Agricultural Engineering

College of Agricultural Engineering (CAE) is one of key constituent colleges of RPCAU and it came into existence on 7th Dec. 1983 to give much needed impetus for agricultural development in the state through education, research and transfer of technologies in the domain of agricultural engineering. The College of Agricultural Engineering, Pusa offers B.Tech. (Agricultural Engineering) degree programme of 4 years duration, M. Tech. and PhD degree programme of 2 and 3 years duration respectively in all the three disciplines - Farm Machinery and Power Engineering, Soil and Water Engineering and Processing & Food Engineering. College follows a nationally accepted syllabus approved by ICAR both at UG and PG levels.

About Patna

The 55th Annual Convention and International Symposium are being held in Patna. Patna called as ancient Patliputra by Mauryas and Azimabad by Mughlas is the capital of Bihar state. Patna is located on the south bank of the Ganges River, called Ganga locally. Patna has a very long riverine, and it is surrounded on three sides by rivers—the Ganga, Son, and Punpun. Just to the north of Patna across the river Ganga flows the river Gandak making it a unique place having four largish rivers in its vicinity. The city is approximately 25 km long and 9 km to 10 km wide. The bridge over the river Ganga, named after Mahatma Gandhi, is 5850 m long is said to be the longest single river bridge in the world. Patna's historic monuments include the mosque of Husayn Shah of Bengal; the Sikh Temple associated with the 10th Sikh Guru, Guru Govind Singh; and the granary at Bankipur, popularly called the Golghar.

Climate

In November, the days are bright, sunny and moderate heat with eleven hour daylight; maximum temperature is around 28°C during day and minimum temperature around 15°C at night, thus, a pleasant and cool climate can be enjoyed. The delegates are advised to have light warm clothing with them.

How to reach Patna

Patna can be reached by bus, train and air from different parts of the country. Patna railway junction has direct trains on the broad gauge network to most of the major Indian destinations such as New Delhi, Mumbai, Chennai, Kolkata, Jammu Tawi, Ludhiana, Udaipur, Varanasi, Guwahati, Bhubneshwar, Jaipur, Bangalore, Hyderabad, Nagpur, Bhopal, . Patna can be easily reached from any part of the world by taking a flight to the Lok Nayak Jayaprakash Airport, Patna.

Accommodation

The list of hotels along-with the tariffs will be available on the Convention website. The delegates are advised to email travel plan to isaerpcau2021@gmail.com to facilitate local travel arrangements if required. The details regarding accommodation and transport will be updated from time to time on the Convention website. Hotels are available in the tariff range from Rs. 2000/- to Rs. 10,000 per day.

Sponsorship and Advertisement:

Industry partners across the country are invited for various categories of sponsorship and advertisement in the compendium that will be released during the inaugural function of the Convention. Platinum sponsors (Rs. 5 Lakh), Diamond (Rs. 4 Lakh), Gold (Rs. 3 Lakh), Silver (Rs. 2 Lakh) and other (Rs 1.0 lakh) In additions to this the industries are encouraged to sponsor lunch, dinners and registration kits for the convention. A compendium containing lead papers and abstract will be published and released during the conference. We welcome advertisements in the Compendium and Industrial Exhibition at the venue of the convention. The rates of the advertisements for the compendium are:

- | | |
|--------------------------------------|-------------|
| 1. Back cover page (colour) 8.5”X11” | : Rs 40,000 |
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Amount for sponsorship/advertisement may be remitted through Cheque/DD/Online Bank transfer in the same manner as registration fee.

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November 23-25, 2021, Patna, Bihar, India

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