



ORCID iD

Peeyush Soni

SCOPUS Author ID: 9248907800 ORCID: <http://orcid.org/0000-0001-9533-6858>Research Gate: https://www.researchgate.net/profile/Peeyush_SoniMendeley: <https://www.mendeley.com/profiles/peeyush-soni/>Google Scholar: <https://scholar.google.com/citations?hl=en&user=VCQFMoUAAAAJ>

Web of Science ID: AAA-1981-2019 Publons ID: 2931753

Current affiliation:

Associate Professor
(Farm Machinery and Power)

Agricultural and Food Engineering Department
Indian Institute of Technology Kharagpur
Kharagpur - 721 302, West Bengal, India

Contact details:

F-101/AGFE/IITKGP
Office: (3222) 283100
Cell: 959 356 6905
soni@iitkgp.ac.in
soni.ait@gmail.com

Research interests:

- Sustainable Agricultural Mechanization
- Soil Tillage and Wetland Traction
- Precision Agriculture
- Management of Mechanized Agriculture

Professional preparation:

2006	D.Eng. (Agricultural Engineering) , Asian Institute of Technology, Thailand	[CGPA 4.0/4.0]
2003	M.Eng. (Agricultural Engineering) , Asian Institute of Technology, Thailand	[CGPA 4.0/4.0]
2001	B.Eng. (Agricultural Engineering) , MPUAT – Udaipur, Rajasthan, India	[Merit holder]

Professional experience:

2018- present	Associate Professor , Department of Agricultural and Food Engineering Indian Institute of Technology Kharagpur, India
2015-2018	Associate Professor , Department of Food, Agriculture and Bioresources Asian Institute of Technology, Thailand
2012-2015	Assistant Professor , Department of Food, Agriculture and Bioresources Asian Institute of Technology, Thailand
2007-2012	Senior Instructor, Adjunct/Affiliated Faculty Asian Institute of Technology, Thailand

Awards and Honors:

Senior Professional Engineer (Academic) Award CTAE Alumni Society, Maharana Pratap University of Agriculture and Technology, Udaipur, India (2020)

Adjunct Faculty Asian Institute of Technology Thailand (July 2018 – June 2019)

Member Academic Council Sam Higginbottom University of Agriculture, Technology and Sciences (SHUATS), India (Dec 2018 – Dec 2019*)

Visiting Faculty Vaugh School of Agricultural Engineering and Technology; Faculty of Engineering and Technology; Sam Higginbottom University of Agriculture, Technology and Sciences (SHUATS), India (Nov 2014 – Nov 2019*)

ScienceDirect Top 25 Ranked 9th in Top25 for *Journal of Terramechanics*–Jan- Mar 2013. ScienceDirect Top 25 List of Most Downloaded Paper, by Elsevier BV, Amsterdam, The Netherlands (2013)

ScienceDirect Top 25 Ranked 24th in Top 25 for *Agricultural Systems* – Jan- Mar 2013. ScienceDirect Top 25 List of Most Downloaded Paper, by Elsevier BV, Amsterdam, The Netherlands (2013)

Best Paper Award The best technical paper presented at the 2011 ISTVS Conference; The International society for Terrain-Vehicle Systems; Sept. 18-22, 2011, Blacksburg, Virginia, USA (2011)

AMA-ShinNorinsha-AAAE Young Researcher Award For outstanding contributions to the advancement of Agricultural Engineering profession; Asian Association for Agricultural Engineering (AAAE) (2010)

ScienceDirect Top 25 Ranked 4th on the Top 25 for *Biosystems Engineering* – Oct - Dec 2005. ScienceDirect Top 25 List of Most Downloaded Paper, by Elsevier B.V., Amsterdam, The Netherlands (2005)

The Reddy Award For the best graduate thesis; Indian Society of Agricultural Engineers (ISAE) (2004)

AIT Alumni Association Prize For the *most outstanding academic performance* in the School of Environment, Resources and Development, 98th Batch, Asian Institute of Technology (2003)

Y. Y. Kishida Prize For the *most outstanding academic performance* among students in Agricultural Engineering, Asian Institute of Technology (2003)

Government of the Netherlands Scholarship Recipient of scholarship for M.Eng.(2002)

Maharana Mewar Foundation Bhamashah Award For state level academic excellence in Agricultural Engineering, Rajasthan state, India (2001 – 2002)

University Certificate of Merit For B.Eng. (Agri.); Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan state, India (2001)

Certificate of Merit For secondary school examination, by Ministry of Human Resources & Development, Department of Education, Government of India (1994)

Student supervision:

Ongoing PhD = 4 + 2 (joint)

Ongoing M.Tech = 6

Ongoing B.Tech = 4

COMPLETED since 2008 -		
Supervision	Supervisor	Co-Supervisor
PhD	12	9
Master's	79	1

External Examiner: PhD = 5 [completed]; MS / MTech = 1 [completed]

Year-wise publications (as in Sept 2022)	
Year	Published/Accepted
2022	3
2021	4
2020	3
Upto 2019	77
TOTAL	87

Journal metrics (as in 2022)	
ISI IF / CiteScore	
IF ≥ 5	18
IF ≥ 4	21
IF ≥ 3	32
IF ≥ 2	40
IF ≥ 1	46
0 < IF < 1	9

Other products:

Books/Monographs: **4**, Book chapters: **6**, National journals: **4**, Conference proceedings: **37**, Invited talks / Keynotes: **35**
 Workshop / Short courses talks: **50+**

Synergistic professional activities:

- Director (International Relations)** Asian Association for Agricultural Engineering (AAAE) (2022-)
- Vice President** (Elect) Section-II, Asian Association for Agricultural Engineering (AAAE) (2014-2018)
- Secretary General** (Elect) Asian Association for Agricultural Engineering (AAAE) (2007-2009)
- President of the AIT Student Union** (Elect) (2004)
- Associate Editor – Farm Machinery and Power** Agricultural Engineering Today (AET), Indian Society of Agricultural Engineers (ISAE), ISSN 0970-2962 (2019- continuing)
- Editorial Board Member** Journal of Agricultural Science and Technology; Published by Nong Lam University Hochiminh city, Viet Nam (2017-*)
- Co-operating Editor** Agricultural Mechanization in Asia, Africa, and Latin America; ISSN 0084-5841; Published by Farm Machinery Industrial Research Corp., Japan (2016-*)
- Editorial Board Member** Asia Pacific Journal of Sustainable Agriculture, Food and Energy (APJSAFE); ISSN 2338-1345; Published by Sustainable Agriculture, Food and Energy (SAFE2013) Network, Indonesia (2013-2016)
- Editorial Board Member** International Journal of Agricultural and Biological Engineering (IJABE) (2012-2015)
- Assistant Editor** International Agricultural Engineering Journal (IAEJ), ISSN 0858-2114 (2008-2009)
- Newsletter Editor** AAAE Newsletter, Vol. 16(3), 16(4), 17(1), 17(2), 17(3&4), 18(1&2), 18(3&4) ISSN 0858-706X, published quarterly (2007-2009)

International Project Proposal Reviewed: **13** [completed]
 USA-Israel Agricultural Fund; Kazakhstan National Center of Science & Technology Grant; Sultan Qaboos University Research Grant

Administrative positions held:

- Degree Program Chair** Agricultural Systems & Engineering Graduate Degree Program; AIT Thailand (2017-2018)
- UG Program Coordinator** Undergraduate Program on Biosystems Engineering (BSE); AIT Thailand (2014-2016)
- Degree Program Chair** Agribusiness Management (ABM) Graduate Degree Program; AIT Thailand (2017-2018)
- Degree Program Chair** Agricultural Systems & Engineering Degree Program; AIT Thailand (2009-2010; 2017-2018)

Sponsored research / Consultancy experience:

Ongoing / Under consideration

1. **Joint Principal Coordinator** “*Vision-Guided AI Enabled Robotic Apple Harvester (VGH)*”. Sponsoring Agency: Centre for Development of Advance Computing (CDAC), Ministry of Electronics and Information Technology, Govt. of India. Total budget: **61.34 Lakhs INR**. Duration: 1/3/2022 – 31 Mar 2024 (Status: **ON GOING**)
2. **Principal Coordinator** “*Indo-South Korea Joint Network Centre for Environmental Cyber Physical Systems (JNC)*”. Sponsoring Agency: International Bilateral Cooperation Division, Dept. of Science and Technology (DST), Govt. of India. Total budget: **22.91 Lakhs INR**. Duration: 1/1/2021 – 31 Jan 2024 (Status: **ON GOING**)
3. **Consultant** Consultancy Project Type-III “*Validating Mahindra & Mahindra Range of Tractors in Selected Southeast Asian Countries*”. Sponsoring Agency: Mahindra & Mahindra Ltd., Mumbai. Consultancy fee: **23 Lakhs INR** Duration of project: 8/11/2019 – 28/2/2024 (Status: **ON GOING**)
4. **Co-Consultant** Consultancy Project “*Nutrient Recommendations using Novel XRF and IR based Soil and Plant Analysis (NBSA)*”. Sponsoring Agency: Coromandal International Limited, Telangana, India. Consultancy fee: **20 Lakhs INR** (With equipment grant of worth **1 Crore** approx.). Duration: 26/6/2019 – 25/6/2022 (Status: **ON GOING**)
5. **Principal Coordinator** **TEQIP-III** sponsored short term course is designed on “Sustainable Agricultural Mechanization”. (Status: **APPROVED**) Program ID: IIT/CEP/STC/TQ/2019-2020/AG/66
6. **Principal Investigator** Institute Scheme for Innovative Research and Development (**ISIRD**) Project Title: “Developing a Fleet of Autonomous Agricultural Vehicles (AAVs) for Intelligent Maneuvering and Operation in Precision Farming”. Total budget: **28 Lakhs INR**. (Status: **ON GOING**)

7. **Co-PI** Project Title: “Optimal In-field Laser Land Leveling Operation for Equal Cut-Fill Ratio and Minimum Travel Path using Particle Swarm Optimization”. Total budget: **30.45 Lakhs INR**. Sponsoring Agency: Science and Engineering Research Board (SERB), Dept. of Science and Technology (DST), Govt. of India. Duration: 6/3/2020 – 5/3/2023 (Status: **ON GOING**)

Sponsored research / Consultancy experience: COMPLETED

Sponsored Projects			
	Project name	Sponsored by	From - To
1	<i>Nitrogen-use-efficiencies under precision agriculture management</i>	SABIC Global Technologies BV, The Netherlands	Oct 2017 – Dec 2019
2	<i>Field evaluation of input-use-efficiencies under precision agriculture management</i>	SABIC Global Technologies BV, The Netherlands	Apr 2017 – Dec 2019
3	<i>Technological development for climate resilience and efficient use of resources for the agricultural sector in Thailand : Phase- II (Implementation)</i>	Climate Technology Centre and Network (CTCN)- UNEP, United Nations	Sept 2016 – Apr 2018
4	<i>Technological development for climate resilience and efficient use of resources for the agricultural sector in Thailand : Phase- I (Response Plan)</i>	Climate Technology Centre and Network (CTCN)- UNEP, United Nations	May 2016 – Oct 2016
5	<i>Durability-Stress Tests for Agricultural Tractor under Extreme Traction Conditions</i>	John Deere India Pte. Ltd.	Sept 2015 – Dec 2015
6	<i>Development of an Instrumentation and Data Acquisition System for Agricultural Tractor</i>	John Deere India Pte. Ltd.	Feb 2012 – Dec 2013
7	<i>Short-term training program for final year students as a part of their international internship on Agribusiness and Agroindustries in Thailand</i>	Sam Higginbottom University of Agriculture, Technology and Sciences SHUATS , India	Aug 2011 – Dec 2017
8	<i>Laboratory training program for capacity building of SQU</i>	Sultan Qaboos University SQU , Muscat (Oman)	Jul 2010 – Aug 2010
9	<i>Enhancing Productivity and Market Linkages- Improving the Livelihoods and Food Security of Smallholders in Asia – with 2 other Co-PIs</i>	United States Agency for International Development (USAID)	May 2013 – Apr 2016
10	<i>An assessment of the technical capacity of aquaculture business in East Africa – with 1 other Co-PI</i>	GATSBY Africa	Nov 2016 – Dec 2017
11	<i>Life Cycle Assessment of Export Rice and Cotton in South-South East Asia: promoting communication, capacity building and networking in LCA research activities– with 3 other Co-PI</i>	CIRAD (France)	Jan 2010 – Dec 2012

Individual Consultancy / Professional Engagement:			
	Consultancy name	Contracted by	From - To
1	Consultant <i>To draft the content of the regional database guideline of the regional database guideline on Agricultural Mechanization in Asia and Pacific – upon consultation with Technical Working Group designated by member countries</i>	Center for Sustainable Agricultural Mechanization (CSAM) Beijing; United Nations-ESCAP	Feb 2017 – June 2017
2	Consultant <i>To develop and draft the outline of the regional database guideline on Agricultural Mechanization in Asia and Pacific</i>	Center for Sustainable Agricultural Mechanization (CSAM) Beijing; United Nations-ESCAP	Oct 2016
3	Consultant <i>To develop a case study on mapping exercise in the area of custom hiring of agricultural machines in the Dry Zone of Myanmar</i>	Center for Sustainable Agricultural Mechanization (CSAM) Beijing; United Nations-ESCAP	Aug 2015 – Dec 2015
4	Consultant <i>To undertake initial planning work on establishing the Regional Database of Agricultural Mechanization in Asia and Pacific</i>	Center for Sustainable Agricultural Mechanization (CSAM) Beijing; United Nations-ESCAP	Mar 2015 – May 2015
5	International Consultant/Expert <i>Analytical Publication on the Status and Future of Sustainable Agricultural Mechanization (SAM) in Asia and the Pacific</i>	FAO- Regional Office for Asia and the Pacific (Bangkok)	Jan 2013 – Dec 2014
6	International Coordinator <i>Commissioning and coordinating regional studies on Public-Private-Partnership (PPP) for Agribusiness and Agro-industry development in Asia</i>	FAO of the United Nations (Italy)	Jan 2010 – Dec 2011
7	Consultant <i>To feasibility study on the proposed establishment of Asia-Pacific Network for Testing Agriculture Machinery (ANTAM) , containing macro-analysis, country need assessment, and to make policy recommendations</i>	United Nations Asian and Pacific Centre for Agricultural Engineering and Machinery (UNAPCAEM) Beijing; United Nations-ESCAP	Nov 2009 – Jan 2010
8	Expert <i>To contribute and participate in an Expert Group Meeting on Application of Green Agriculture Machinery for Sustainable Agriculture in the Asia-Pacific Region</i>	United Nations Asian and Pacific Centre for Agricultural Engineering and Machinery (UNAPCAEM) Beijing; United Nations-ESCAP	Sept 2009

9	Consultant <i>To write a review of the feasibility study on the potential application of CDM in Conservation Agriculture</i>	United Nations Asian and Pacific Centre for Agricultural Engineering and Machinery (UNAPCAEM) Beijing; United Nations-ESCAP	Aug 2009 – Sept 2006
10	Consultant <i>To analyze and report agricultural engineering R&D situation in South Asia, Southeast Asia and Northeast Asia</i>	United Nations Asian and Pacific Centre for Agricultural Engineering and Machinery (UNAPCAEM) Beijing; United Nations-ESCAP	Sept 2006 – Dec 2006

Selected research contributions:

- Design and Development of an Automatic Grading Machine for Palm Oil (*Elaeis guineensis*) Fresh Fruit Bunches (FFB) using Non-Destructive Examination
- Low-Altitude Remote Sensing and Image Processing for Weed and Disease Monitoring by an Unmanned Radio-Controlled Helicopter
- Design and Evaluation of a Smart Greenhouse Control System with Remote Interface over Internet
- Development of a Non-Destructive Ground-Based Nitrogen Sensing System for Coffee Plantation
- Development of Precision Inter and Intra Row Weeding Robot on the Paddy Field
- Unmanned wet-direct Seeding of Rice Robot using a Computer Vision based Seed Row Guidance for High Inter-Row Precision
- Development of a Smart Farm for Automated Irrigation and Fertilization
- Obstacle Detection and Identification for Autonomous Agricultural Vehicles
- Machine-Vision based Precise Measurement of Seed Flow Rate
- DC-Motor Powered Precise Transplanting Mechanism for Paddy
- Development of a Submerged Aquatic-Weed Harvester for Irrigation Canals
- Development and Performance Evaluation of a Cassava Harvester
- Anthropometry of Indonesian Agricultural Workers and its Application in Design of Agricultural Tools
- Modeling Soil and Powered-Disc Interactions for Development of a Disc Harrow
- Multicriteria Decision Making in Integrated Agriculture Production Systems
- Performance of Diversified Cropping Systems and Practices: Techno-Economic and Environ-Energy Auditing