



भाकृअनुपराष्ट्रीय प्राकृतिक रेशा अभियांत्रिकी एवं प्रौद्योगिकी संस्थान-

12, रीजेंट पार्क, कोलकाता 040 700 -, (आईएसओ 9001: 2015)

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PROFILE

1. Full Name : **Dr. Vidya Bhushan Shambhu**
2. Educational Qualification: **Ph.D. in Farm Machinery and Power Engineering**
3. Designation: **Principal Scientist**
4. ARS Discipline: **Farm Machinery and Power**
5. Date of joining in ICAR: **10th September, 2001**
6. Date of Joining in ICAR-NINFET: **3rd July, 2012**
7. Working experiences (in years)
 - a. Research: **22 years**
 - b. Teaching: **03 years (Part-Time Lecturer)**
 - c. Industry:-
8. Area of work (Five areas only)
 - a) **Design, development and testing of farm equipments and implements.**
 - b) **Energy analysis for the cultivation of crops.**
 - c) **Alternative source of fossil fuel like biofuel (biodiesel and utilization of biomass as energy)**
 - d) **Performance evaluation of agricultural implements.**
 - e) **Utilization of non-conventional sources of energy.**
9. Contact details
 - a. Mobile No:8777675991
 - b. Email (Including ICAR email): vbs9605@gmail.com & yb.shambhu@icar.gov.in
10. Number of project completed (As PI) : **07 (Seven)**
 - a. **Energy Evaluation in Cultivation of Jute**
 - b. **Design and development of low cost multi-row manual Jute seeder.**
 - c. **Performance evaluation of existing weeders**



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- d. **Demonstration and evaluation of multi-row manual jute seeder**
- e. **Evaluation and Demonstration of NIRJAFT high capacity Power Ribboner for Extraction of Ribbons from Jute and Mesta plants**
- f. **Comparative evaluation of available ribboners**
- g. **Improvement, upscaling and popularization of Power Ribboner**

11. Professional Achievements (Awards / Best Papers/Appreciation)

- a. Received **Fellowship (F - 1234818)** from The Institution of Engineers (India) for the year 2017.
- b. Received "**Distinguish Service Award -2018**" for significant contribution in the field of Farm Machinery and Power engineering by Indian society of Agricultural Engineers (ISAE), New Delhi for the year 2018
- c. Received **Excellence in Research Award** for outstanding contribution in the field of Farm Machinery & Power by Society for Agriculture Innovation & Development (SAID), Ranchi for the year 2018.
- d. Received **Team Award** for development of an extractor to produce good quality banana fibre for textile use by Indian society of Agricultural Engineers (ISAE), New Delhi for the year 2017.
- e. Received (Dr. L. K. Nayak, Dr S. Debnath & Dr. V. B. Shambhu) "**Best Paper Award**" Oral Presented in the technical session on Production & Quality Enhancement of Natural Fibre – a way Forwarding during National seminar on Natural Fibre Resource Management for Sustainable Development held at ICAR-NINFET, Kolkata during February 02-03, 2019.
- f. Recognized as **Board member** for Amity Journal of Agribusiness (AJAB). ISSN:2455-9873 (Print) and ISSN: 2456-1525 on line
- g. Recognized as Paper setter and examiner by the Vice Chancellor, Central Agricultural University, Imphal, Manipur (College of Agricultural Engineering & Post Harvest Technology,(Central Agricultural University), Ranipool, Gangtok-737135, Sikkim in 2015
- h. Served as **external examiner** for two M.Tech Thesis evaluation and conducted viva-voice examination at Faculty of Agricultural Engineering, BCKV, Mohanpur, West Bengal on 03/07/2017.
- i. Nominated as **Member of the Agricultural Engineering Divisional** Sub-committee of West Bengal State Centre of Institution of Engineers (India)
- j. Alternate Member for **Agricultural Tractor & Power Tillers Sectional Committee (FAD 11)**, Bureau of Indian Standards, New Delhi for the year 2019-20.
- k. **Co-Convenor** for the All India Seminar on "*Appropriate Farm Mechanization for Small & Marginal Farmers*" organized during 08-09, August 2014 by Agricultural



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Engineering Division, West Bengal State Centre, The institution of Engineers (India).

- l. Served as external examiner for two M.Tech Thesis evaluation and conducted viva-voice examination at Faculty of Agricultural Engineering, BCKV, Mohanpur, West Bengal on 03/07/2017.
- m. **Co- Chairman** in Technical Section - I (Farm Machinery and Power (FMP-2) THEME ON Mechanisation, Tillage and Seeding during 53rd Annual Convention of Indian Society of Agricultural Engineers (ISAE) and International Symposium on Engineering Technology for Precision and Climate Smart Agricultural on 29.01.2019 held at BHU, Varanasi during January 28-30, 2019
- n. Nominated as an **Expert Member** of State Level Executive Committee (SLEC) as well as District Level Executive Committee (DLEC) for proper implementation of the scheme of Agricultural mechanization in Government of West Bengal for the year 2014-15.
- o. Nominated as an **Expert Member** on farm Mechanization in the State Level Executive committee under Farm Mechanization Schemes in Government of West Bengal for the year 2021-22
- p. Nominated as a **member of Board of Studies (BOS)** for B.Tech. Agril. Engg. Programm at JIS College of Engineering, Kalyani, West Bengal from 08/02/2022
- q. Acted as **external examiner** for four M. Tech (Agril. Engg.) Thesis evaluation and conducted viva-voice examination at Faculty of Agricultural Engineering, BCKV, Mohanpur, West Bengal on 16/08/2022
- r. Acted as **Board of Studies (BOS)** member for B.Tech. Agricultural Engineering programme of JIS College of Engineering, Kalyani, West Bengal on 24/05/2023
- s. Nominated as a Member for Agriculture and Food Processing Equipment Sectional Committee (FAD 20), Bureau of Indian Standards, New Delhi for the year 2023-25.

12. List of publication (Numbers only)

- a. Research papers in National journal (NAAS rated): **16**
- b. Research papers in International journal (NAAS rated): **18**
- c. Popular articles: **38**
- d. Book Chapter: **14**
- e. Books Edited: **03**
- f. Seminar Papers: **16**
- g. Bulletin: **02**

13. Seminar presentation (numbers only)

- a. Invited papers :-



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b. Research papers: **58**

14. Patents Applied (Numbers only):**06**

15. Patents Granted (Details)

- V. B. Shambhu**, L. K Nayak, S. Das, and P. Sanyal (2023). A Power Ribboner Machine for Stripping of outer green barks/ribbons from jute and mesta plants. *Indian patent* No - **480525**, Application No. 201731040456 granted on 11.12.2023.
- L. K. Nayak, **V. B. Shambhu** and S. C. Saha (2023). A Double Roller Banana pseudo-stem fibre extractor. Indian Patent No - **450656**, 201631031921 granted on 11.09.2023.
- L. K. Nayak, S. Debnath, **V. B. Shambhu** and A. Das (2023). A leaf processing device for extraction of fibre from pineapple leaves. Indian Patent No - **433203**, Application No. 201831017352 granted on 30.05.2023.
- L. K. Nayak, **V. B. Shambhu** and S. Debnath (2023). Leaf Fibre Extractor for extraction of fibres from green Sisal Leaves. Indian Patent No - **467849** Application No. 201831015037 granted on 09.11.2023.

Design registration (Granted)

- 339143-001 dated 15/02/2021 for Banana Pseudo-Stem fibre extractor granted on 23.02.2023
- 351892-001 dated 23.10.21 for A system for extraction of fibre from Flax Stalk granted on 16.05.2023
- 371068-001 dated 19/09/2022 for Power Ribboner Machine granted on 23.05.2023

16. Technology Commercialised (five with details)

- Technology of two models (i.e. 4-rows and 5-rows) of low cost simple manual jute seed drill for jute fibre production purpose and 3-rows manual seed drill for jute seed multiplication purpose at CRIJAF, Barrackpore was commercialized with M/s Mettle Engineering Company up to 2016 later with another two firms M/s Joy Maa Tara Enterprise, west Bengal and M/s Krishi Udyog, West Bengal as PI.**
- Technology of Gender Friendly Power Ribboner developed at ICAR-NINFET, Kolkata was commercialized with M/s JOY MAA TARA ENTERPRISES, West Bengal As PI.**
- Technology of Banana Pseudo-stem fibre extractor machine was commercialized with M/s Joy Maa Tara Enterprise, west Bengal as Co PI.**
- Technology of Pineapple Leaf Fibre Extractor machine was commercialized with M/s Joy Maa Tara Enterprise, west Bengal as Co PI.**



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- e. **Technology of a system for Extraction of Fibre from Flax Stalk machine was commercialized with M/s Paul Engineering, West Bengal as Co PI.**

17. List the five major achievements in the career

- Designed, developed and commercialized two models (i.e. 4-rows and 5-rows) of low cost Simple manual jute seed drill for jute fibre purpose and one 3-row for jute seed purpose.**
- Energy Evaluation in Cultivation of Jute through which one can know what type of intervention to be needed in jute crop cultivation.**
- Designed, developed and commercialized Power ribboner to extract outer green bark from jute plant keeping sick intact.**
- Designed, developed of Decorticator (Multi-fibre Extractor) to extract outer green bark from bast plant**
- Designed, developed and commercialized Banana fibre extractor machine.**
- Designed, developed and commercialized Pineapple Leaf Fibre Extractor machine.**
- Designed and developed and commercialized flax fibre extractor machine**

18. List the 10 best research publications in the whole career (Details)

- Shambhu, V. B.** and Ram, R. B. (2007). Status of farm mechanization in Nalanda of Bihar, *Agricultural Mechanization in Asia, Africa and Latin America (AMA), Japan, 2007*; 38(1): 18-22.
- Shambhu, V. B.**, Gupta, J. P., Jha, S. K. and Kumar Sanjay (2009). Farm Power Status and its Utilization Pattern in Nalanda district of Bihar – A case study, *Agricultural Mechanization in Asia, Africa and Latin America (AMA), Japan, 2009*; 40(2) :13-21.
- Shambhu, V. B.** and Chaudhary, S. K. (2012). Utilization pattern of tractors in Nalanda district of Bihar – A case study, *Agricultural Mechanization in Asia, Africa and Latin America (AMA), Japan, 2012*; 43(1): 9-13.
- Shambhu, V. B.**, Bhattacharya, T. K. and Chaudhary, S. K. (2012). Compatibility of Jatropha oil bio-diesel and petro diesel as an engine fuel based on their characteristic fuel properties, *Agricultural Mechanization in Asia, Africa and Latin America (AMA), Japan, 43(2)*: 43-49.
- Shambhu, V. B.** and Jha, S. K. (2012). Problems and Prospects of Agricultural Mechanization in Bihar, India, *Agricultural Mechanization in Asia, Africa and Latin America (AMA), Japan*; 43(3) : 55-59.
- Shambhu, V. B.** and Bhattacharya, T. K. (2015). Production of biodiesel from *Jatropha curcas* L. oil having high free fatty acids content. *Agricultural Mechanization in Asia, Africa and Latin America (AMA), Japan*; 46(4): 63-66.



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- g. **Shambhu, V. B.** (2016). Energy use Pattern and Economic Analysis of Jute Production in West Bengal (India). *Agricultural Mechanization in Asia, Africa and Latin America (AMA), Japan*; 47(4): 74-81.
- h. **Shambhu, V. B.** and Thakur, A. K. (2019). Laboratory and field performance of manual seed drill for sowing jute and tiny seeds. *The Indian Journal of Agricultural Sciences* 89(1): 129-132.
- i. **Shambhu, V. B.** (2020). Design and development of low cost multi-row manual jute seed drill. *Agricultural Mechanization in Asia, Africa and Latin America (AMA), Japan*; 51(2): 46-51.
- j. **Shambhu, V. B.,** Shrivastava, P, Jagdale, Manisha, Nagesh Kr. T and Nayak, L. K (2023). Development of Gender-Friendly Power Ribboner for Extraction of Green Ribbon/Bast from Jute Plants. *Journal of Natural Fibers*, 20 (2): 1-16: <https://www.tandfonline.com/loi/wjnf20>.

19. Training program attended (Numbers only): **12**

20. Training program organized (Numbers only): **80**

21. Professional Affiliations (Details)

- a. **Life Member of Indian Society Agricultural Engineers**
- b. **Fellow of the Institution of Engineers, India (IEI), Kolkata**
- c. **Life Member of the Society for Agriculture Innovation and Development (SAID), Ranchi**
- d. **Life Member of The Indian Natural Fibre Society**