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राष्ट्रीयपटसनएवंसमवर्गीरेशाप्रौद्योगिकीअनुसंधानसंस्थान
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PROFILE*

1. Full Name : NILIMESH MRIDHA
2. Educational Qualification : Ph.D.
3. Designation : Scientist
4. ARS Discipline : Agricultural Physics
5. Date of joining in ICAR : 01.01.2013
6. Date of Joining in ICAR-NINFET : 01.07.2018
7. Working experiences (in years)
    a. Research : 9 Years
    b. Teaching : 5 Years
    c. Industry : Nil
8. Area of work (Five areas only)
    a. Remote sensing, GIS, crop modelling using remote sensing inputs
    b. Radiative transfer modelling of crop biophysical parameters
    c. Soil Physics, Biophysics, effect of static magnetic field on crop seeds, Agrometeorology
    d. Natural fibre based Agro textile mulching in different crops.
    e. Composting of natural fibre waste under natural farming
9. Contact details
    a. Mobile No : 7982974908
    b. Email (Including ICAR email) : nilimesh.mridha@gmail.com
10. Number of project completed (As PI)
    a. 0
    b. 5 (As Co-PI)
11. Professional Achievements (Awards / Best Papers/Appreciation)
    a. 2 (best paper awards)
    b.
12. List of publication (Numbers only)
    a. Research papers in National journal (NAAS rated) : 10
    b. Research papers in International journal (NAAS rated) : 8
    c. Popular articles : 16
    d. Book Chapter : 6
    e. Books Edited : Nil
    f. Seminar Papers : 11
    g. Bulletin : 4
13. Seminar presentation (numbers only)
    a. Invited papers : Nil
    b. Research papers : 6
14. Patents Applied (Numbers only) : Nil
15. Patents Granted (Details) : Nil
    a. …
    b. …
16. Technology Commercialised (five with details) : Nil

a. ….
b. ….

17. List the five major achievements in the career

- Developed time series MODIS Terra EVI data based wheat yield prediction models for Punjab and Haryana and rice yield prediction models for Indo-Gangetic Plain (IGP)
- Methodology developed for field level and regional retrieval of wheat & soybean bio-physical parameters through PROSAIL inversion and evaluation of different inversion approaches & Development of crop health Index (CHI) from remote sensing derived wheat & soybean biophysical products
- Development of spectroscopic relation between spectra and organic carbon of different compost mixtures & Developed methodology to predict of soil health parameters using hyper-spectral reflectance data
- Developed methodology for spectral discrimination of different crop species using hyperspectral remote sensing data. Developed methodology to identify and discriminate blue green algae (BGA) species using hyper-spectral reflectance data & Developed methodology to identify and discriminate grape vine diseases using hyper-spectral reflectance data
- Comprehensive studies on effect of jute non-woven agrotextile of different GSM on soil hydrothermal, nutrients, biological, crop growth and yield, fruit quality parameters of summer tomato, strawberry and capsicum crops. Studied enhancement in germination and seedling growth parameters of cherry tomato and capsicum crops using wool non-woven nursery pots.

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

1. **Mridha, N.,** Sahoo, R.N., Sehgal, V.K., Krishna, G., Pargal, S., Pradhan, S., Gupta, V.K. and Kumar, D.N., (2015). Comparative evaluation of inversion approaches of the radiative transfer model for estimation of crop biophysical parameters. *International Agrophysics*. 29, 201-212. **(NAAS I111: 7.14)**
2. **Mridha, N.,** Chattaraj, S., Chakraborty, D., Anand, A., Aggarwal, P. and Nagarajan, S. (2016). Pre-sowing static magnetic treatment for improving water and radiation use efficiency in chickpea (Cicer arietinum L.) under soil moisture stress. *Bioelectromagnetics*. 37 (6): 400-408. **(NAAS B058: 7.9)**
3. Sudipta Paul, Tarun Kumar Das, Ramsem Pharung, Sanjay Ray, **Nilimesh Mridha**, Nilim Kalita, Vanlalduati Ralte, Sanjoy Borthakur, Rajarshi Roy Burman, Anil Kumar Tripathi, Ashok Kumar Singh, 2020. Development of an indicator based composite measure to assess livelihood sustainability of shifting cultivation dependent ethnic minorities in the disadvantageous Northeastern region of India, ***Ecological Indicators,*** 110,105934. **(NAAS rating=10.49, IF=4.49)**
4. Koushik Banerjee, Prameela Krishnan, **Nilimesh Mridha** (2018). Application of thermal imaging of wheat crop canopy to estimate leaf area index under different moisture stress conditions. Biosystems Engineering, 166: 13-27. **(NAAS B132: 9.22)**
5. Paul S., **Mridha N.,** Vellaichamy S. & Singh P. (2021). Development of a composite measure for mapping rural food and nutrition security: application and validation in the drought-

prone Bundelkhand region of India. Food Security. https://doi.org/10.1007/s12571-021-01152-0, **(NAAS F053: 8.1)**

6. P. Pramanik, BidishaChakrabarti, Arti Bhatia, S. D. Singh**, Nilimesh Mridha** & P. Krishnan, 2018. Effect of elevated carbon dioxide on soil hydrothermal regimes and growth of maize crop (Zea mays L.) in semi-arid tropics of Indo-Gangetic Plains, *Environ Monit Assess 190:661*. **(NAAS E089: 7.9)**
7. Bhattacharya P., Pramanik P., Ray M. and **Mridha N.** (2020). Prediction of mean weight diameter of soil using machine learning approaches. Agronomy Journal. 2021, 1–14. **(NAAS A116: 7.81)**
8. Adak, S., Bandyopadhyay, K.K., Sahoo, R. N., **Mridha, N.,** Shrivastava, M., and Purakayastha, T.J. (2021). Prediction of wheat yield using spectral reflectance indices under different tillage, residue and nitrogen management practices. Current Science, 121(3): 402-413. **(NAAS C203: 6.73)**
9. Roy, A., Kolady, D., Paudel, B., Yumnam, A., **Mridha, N.,** Chakraborty, D. and Singh, N.U. 2021. Recent Trends and Impacts of Climate Change in North-East Region of India-A Review. Journal of Environmental Biology, 42, 1415-1424. **(NAAS J195: 6.78)**
10. Mondal, B.P., Sahoo, R.N., Ahmed, N., Singh, R.K., Das, B., **Mridha, N.** and Gakhar, S. 2021. Rapid prediction of soil available sulphur using visible near-infrared reflectance spectroscopy. Indian Journal of Agricultural Sciences 91(9): 1328–1332, **(NAAS I032: 6.21)**

19. Training program attended (Numbers only) : 10
20. Training program organized (Numbers only) : 15
21. Professional Affiliations (Details) : 5

1. Life member of **The Indian Natural Fibre Society (TINFS)** since September, 2018 (LM-328)
2. Life member of **Indian Society of Remote Sensing (ISRS)** since Aug, 2017 (L-4878)
3. Life member of **Indian Science Congress Association (ISCA)** since December, 2016 (L31942)
4. Life Membership of **Association of Agrometeorologists** since September, 2014 (LM-952)
5. Life member of **Indian Society of Agrophysics (ISAP)** since July, 2013 (L108)