Name	**Dr. NIRMALENDU BASAK**	
Date of Birth	18/08/1984	
Designation	Senior Scientist (Soil Science)	
Qualification	Ph. D. (Agriculture) in Agricultural Chemistry and Soil Science	
Email id	basaknirmalendu@gmail.com;nirmalendubasak@rediffmail.com; nirmalendu.basak@icar.org.in; orcid.org/0000-0002-2281-0253; 9416145187 (WhatsApp)	
Edu Qualification	MSc (Ag., 2008), Ph. D. (Ag, 2012) in Agril. Chem and Soil Sci	
Professional Experience	Fundamental and applied aspects of soil science; soil quality assessment; quantified the stock and stability of organic carbon in soils under major agro-ecological zones; reclamation and rehabilitation of alkali soil with alternative strategies using mineral and biological amendments; active involvement industry–institutional linkage with Reliance Industries Limited (RIL), Mumbai, NTPC (Mis of Power), Heidelberg Cement Industries Ltd., FAGMIL, DST-WTI, RKVY, PMKSY2.0 (Jharkhand Govt.), Crop Diversification (Min. of Agri., GoI). Handled projects as PI (5) and Co-PI (20).	
Research Areas	Soil sci., pedology, water quality, soil organic carbon dynamics, land degradation, remediation of salt–affected soil, geospatial techniques and digital soil mapping.	
Awards	✓ **Advance Training Scholarship Agricultural Sciences**, The Hebrew University of Jerusalem's Robert H. Smith Faculty of Agriculture, Food & Environment, Israel 2015; **ISTRO fellowship**, USD 1500 for attending ISTRO2024 Conference in Virginia Beach, Virginia, USA in Sept 2024; **SERB Tavel fellowship** for attending ISTRO2024 Conference in Virginia Beach, Virginia, USA, 2024; **INSA Grant**, Financial support for attending ISTRO2024 Conference in Virginia Beach, Virginia, USA, 2024; **Award for INSA Visiting Scientist Program**, Indian National Science Academy, New Delhi, 2025.	
Honours/Recognitions	**Golden Jubilee Commemoration Young Scientist Award** Indian Society of Soil Science, New Delhi (India) [Societies Act XXI of 1860 (Registration No. 8164/252 of 1934-35)] 2022. **Young Scientist award (2021–22)** Indian Society of Soil Salinity and Water Quality, Karnal, Haryana, India 2024.	
Teaching/ Guidance	PhD guided: One; MSc and PhD course taught CCSHAU, Hisar (5 year); ICAR–National Dairy Research Institute, Karnal (10year); ICAR–IARI, Karnal hub, Haryana (2 years)	
Best Research Papers along with NAAS Rating	1. **Basak, N**., Rai, A.K., Chandra, P., Sundha, P., Rani, S., Meena, R.L., Sharma, P.C., Yadav, R.K. (2026) Enhanced elemental sulphur oxidation by the haloalkaliphilic Pseudomonas stutzeri strain 16UP4 facilitates sodic soil reclamation and enhances crop productivity, Scientific Reports, doi:10.1038/s41598-026-52860-6 (**NAAS 9.9**). 2. Choudhury, S.G., **Basak, N**., Banerjee, T., Mukhopadhyay, S., Ghosh, B.N., Das, K., Sahoo, A.K., Bhowmick, U.R., Khatun, M., Rahman, F.H., Patil, N.G., (2026) Foxnut (makhana): a productive and economic crop providing good niche for soil carbon storage and stability in lower Gangetic wetlands Scientific Reports, doi:10.1038/s41598-026-40676-3. (**NAAS 9.9**). 3. Rai, A.K., **Basak, N**., Chandra, P., Sundha, P., Kaur, H., Bedwal, S., Patel, S., Kumar, S., Choubey, K., Meena, R.L., Sharma, P.C., Yadav, R.K. (2024) Occurrence of Sphingomonas olei with elemental S oxidation capability in sodic soil: Potential role in sodicity reclamation and plant growth promotion. Ecotoxicology and Environmental Safety 278. https://doi.org/https://doi.org/10.1016/j.ecoenv.2024.116396 (**NAAS 12.1).** 4. **Basak, N**., Rai, A.K., L., K.S., Singh, R.K., Sundha, P., Patel, S., Bedwal, S., Sharm, P.C. (2023) Nutrients availability in salt–affected soils varies with the ionic composition of solid	

	and solution phases of inland and coastal agroecosystems of India Environmental Earth Sciences, 82 https://doi.org/10.1007/s12665-023-11167-9 (**NAAS 9.0).** 5. Sundha, P., **Basak, N**.*, Rai, A.K., Yadav, R.K., Sharma, P.C. , (2023) 1819-1833. Irrigation water quality, gypsum, and city waste compost addition affect P dynamics in saline-sodic soils. Environmental Research 216(2), https://doi.org/10.1016/j.envres.2022.114559. 1145592023 (**NAAS 13.7).** 6. Sundha, P., Mukhopadhyay, R., **Basak, N***., Rai, A.K., Bedwal, S., Patel, S., Kumar, S., Kaur, H., Chandra, P., Sharma, P.C., Saxena, S.K., Parihar, S.S., Yadav, R.K. (2023) Characterization of flue gas desulphurized (FGD) gypsum of a coal-fired plant and its relevant risk of associated potential toxic elements in sodic soil reclamation. Scientific Reports 13, https://doi.org/10.1038/s41598-023-45706-y 19787 (**NAAS 9.9**) 7. Sundha, P., Rai, A.K., **Basak, N**.*, Yadav, R.K., Sharma, P.C. (2023) P solubility and release kinetics in the leachate of saline–sodic soil: Effect of reclamation strategies and water quality. Soil and Tillage Research 222, ttps://doi.org/10.1016/j.still.2022.105440 1054402022 (**NAAS 12.8**). 8. Soni, P.G., Rai, A.K., **Basak, N***., Sundha, P., Narjary, B., Kumar, P., Kumar, R., Yadav, G., Kumar, S., Yadav, R.K., Sharma, P.C. (2023) Effect of deficit saline irrigation, tillage and rice straw mulch in wheat-sorghum cropping system on yield and nutritive value of rainfed forage sorghum in salt–affected soils. Land Degradation & Development34(17) https://doi.org/https://doi.org/10.1002/ldr.4869 5635–5646 (**NAAS 9.7**) . 9. **Basak, N**., Sheoran, P., Sharma, R., Yadav, R.K., Singh, R.K., Kumar, S., Krishnamurthy, T., Sharma, P.C., (2021) Gypsum and pressmud amelioration improve soil organic carbon storage and stability in sodic agroecosystems. Land Degradation & Development 32. https://doi.org/10.1002/ldr.4047 4430–4444 (**NAAS 9.9**). 10. **Basak, N**.*, Mandal, B., Datta, A., Kundu, M.C., Rai, A.K., Basak, P., Mitran, T. (2021) Stock and stability of organic carbon in soils under major agro-ecological zones and cropping systems of sub-tropical India. Agriculture, Ecosystems & Environment312, doi.org/10.1016/j.agee.2021.1073171073172021 (**NAAS 12.4**).
Total Publications **Peer-rev. Journals** **International** **National** **Popular Articles** **Bulletins** **LRI Atlases**	Peer review journal publication 50 (international); 20 (national) Popular article 20; Book 04; Book chapter 25; **Bulletins 02; Compendium 02** **<u>Patent obtained</u>** 1. Saturated-un-saturated hydraulic conductivity meter, ICAR–Central Soil Salinity Research Institute, Rai, AK, **Basak, N**., Chandra P., Sundha, P., Yadav, G., Yadav, R.K., Aavser Global LLP, Phor, V., Singh, A.P., Paliwal, A., Thakur, R. Design No. 468858-001, 07/08/2025. **Govt of India;** 2. Rapid gypsum requirement estimation device ICAR–Central Soil Salinity Research Institute, Rai, AK, **Basak, N**., Chandra P., Sundha, P., Yadav, G., Yadav, R.K., Aavser Global LLP, Phor, V., Singh, A.P., Paliwal, A., Thakur, R. Design No. 468857-001, 07/08/2025 **Govt of India.**

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Research Gate link: <u>https://www.researchgate.net/profile/Nirmalendu-Basak?ev=hdr_xprf</u>

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