

**D. R. Mailapalli, Ph.D**  
**Assistant Professor**

**CURRICULAM VITAE**

---

Agricultural and Food Engineering Department  
F212, PHTC building  
IIT Kharagpur  
Kharagpur, West Bengal 721 302

322-228-2102 (Office)  
760-229-7006 (Mobile)  
[mailapalli@agfe.iitkgp.ernet.in](mailto:mailapalli@agfe.iitkgp.ernet.in)  
[dam.iitkgp@gmail.com](mailto:dam.iitkgp@gmail.com)

---

**RESEARCH AND TEACHING INTERESTS**

My goal is to present information in a manner that allows students to effectively and efficiently gain knowledge and understanding. It is not faculty teaching that is important, but rather student learning.

**Natural Resources Engineering and Management:** soil, plant, water and atmosphere interactions; flow through porous media; surface and ground water interactions; Irrigation systems hydraulics and modeling; agricultural water management, watershed engineering.

**Agriculture and Environment:** sediment and nutrient transport; agricultural runoff quality and eutrophication; best management practices (BMPs); soil amendments, biosolids and polyacrylamide (PAM) for land application, nanotoxicology.

**EDUCATION**

- 2003-2007    **Ph. D, Agricultural Engineering (Soil and Water Conservation Engineering)**  
*Indian Institute of Technology (I.I.T), Kharagpur, India.*  
*Dissertation:* Development and Testing of a Physically Based Model (ZIGASED)  
for Simulating Flow and Sediment Transport in Furrow Irrigation  
*Advisors:* R. Singh and N.S. Raghuwanshi
- 1999-2001    **M. Tech, Agricultural Engineering (Irrigation and Drainage Engineering)**  
*Kerala Agricultural University, Kerala, India*  
*Thesis:* Performance Evaluation of Hydrocyclone Filter  
*Advisor:* John K. Thomas
- 1995-1999    **B. Tech, Agricultural Engineering**  
*ANGR Agricultural University, Andhra Pradesh, India*  
*Project:* Development of an Interactive Software for the Design of Farm Storage  
Structures  
*Advisor:* C. Igathinathane (now, Asst. Prof., Agricultural and Biosystems  
Engineering, North Dakota State University, Fargo, ND)

## **TEACHING AND STUDENT GUIDANCE**

### **a) Teaching:**

Spring 2013-14 2014-15	AG60154: Non-point source pollution and management (3-1-0)
Spring 2013-14	AG60104: On-farm water management (3-1-0)
Spring 2013-14	AG69024: On-farm water management laboratory (0-0-3)
Autumn 2014-15	AG60201: Surface Water Hydrology (3-1-0)
Autumn 2014-15	AG69037: Hydrological Systems Laboratory (0-0-3)
Autumn 2014-15	AG40011: Tubewells and Pumps (3-1-0)
Autumn 2014-15	AG69202: Seminar-II (0-0-3)
Spring 2011	<b>Co-Instructor</b> for BSE 571 (Small Watershed Engineering) at the Biological Systems Engineering Department, UW-Madison, WI, USA.
Fall 2011	<b>Co-Instructor</b> for BSE 473 (Irrigation & Drainage Systems Design) at the Biological Systems Engineering Department, UW-Madison, WI, USA.
Fall 2011	<b>Co-Instructor</b> for BSE 671 (Erosion and Sediment Transport Principles) at the Biological Systems Engineering Department, UW-Madison, WI, USA.

### **b) Ph.D Guidance:**

<b>Session</b>	<b>Name of the student</b>	<b>Role as</b>	<b>Status</b>
Spring 2013	Alpna Debey (13AG92R07)	Supervisor (single)	<ul style="list-style-type: none"> <li>○ completed two-semesters</li> <li>○ cleared course work</li> <li>○ passed comprehensive exam</li> <li>○ defined the thesis problem</li> <li>○ working on the objectives</li> </ul>
Autumn 2014	Niraj kumar (14AG91R13)	Supervisor	<ul style="list-style-type: none"> <li>○ completed one-semester</li> <li>○ cleared course work</li> <li>○ appeared comprehensive exam</li> <li>○ defined the thesis problem</li> <li>○ working on the objectives</li> </ul>
Autumn 2014	Dwarika Mohan Das (14AG91R12)	Joint Supervisor	<ul style="list-style-type: none"> <li>○ completed one-semester</li> <li>○ cleared most of the courses</li> <li>○ defined the thesis problem</li> <li>○ working on the objectives</li> </ul>
Spring 2013	Subhankar Debnath (14AG91P01)	Joint Supervisor	<ul style="list-style-type: none"> <li>○ completed two-semesters</li> <li>○ cleared all the courses</li> <li>○ defined the thesis problem</li> <li>○ working on the objectives</li> </ul>

**Note:** DSC member for three Ph.D students of the AgFE department

**c) M.Tech Guidance:**

Year	Name of the student	Role as	Status
2014-15	Aminul Islam (13AG62R04)	Supervisor	○ Thesis submitted
2014-15	Abhay Kumar (13AG62R06)	Supervisor	○ Thesis submitted
2015-16	L.R. Prasad (14AG62R01)	Supervisor	○ completed one-semester ○ completed first sem course work ○ defined the thesis problem
2015-16	Chandini Bhandari (14AG62R02)	Supervisor	○ completed one-semester ○ completed first sem course work ○ defined the thesis problem
2015-16	Dharinder Mahay (14AG62R03)	Supervisor	○ completed one-semester ○ completed first sem course work ○ defined the thesis problem

**d) B.Tech Guidance:**

B.Tech (4 yrs): Ved Prakash Meena (09AG1027) and Nalli Vizay (09AG3217)

BTech (Dual Degree):V.A. Revat Kireeti (11AG3FP08)

**RESEARCH PROJECTS****a) On-going projects:**

Duration	Name of the Project	Role as	Grant amount (in Lakh)	Funding agency
2014-17	Application of Nano-fertilizers for improved crop production and Nutrient Use Efficiency (NPN)	Principal Investigator	46.02	MHRD, Govt. of India
2014-17	Production and Testing of Granulated Bio-nutrients Derived from Dairy Manure (PNM)	Principal Investigator	26.85	SRIC, IIT -Kharagpur
2014-17	Water & Nutrient Use Efficiency of Different Rice Management Techniques with the use of On-farm Reservoir Facilities (WUE)	Co-Principal Investigator	46.72	MHRD, Govt. of India
2014-17	Development of a Sensor Based System for Improved Water Management for Irrigated Crops (WMI)	Co-Principal Investigator	46.02	MHRD, Govt. of India
2014-17	Sustainable Food Security Through: Technological Interventions for Production, Processing and Logistics (SAL)	Co-Investigator	2600.00	MHRD, Govt. of India
2013-16	Development of a Conceptual Water Balance Model for Various Ecosystems of India (DWI)	Co-Principal Investigator	20.30	SAC, Govt. of India

**b) Projects submitted/under review**

Year	Name of the Project	Role as	Grant amount (in Lakh)	Funding agency
2015	Influence of Soil Matrix Temperature Gradient on Subsurface and Surface Nutrients Transport	Co-Principal Director	2034.00 (\$3.39 Millions)	NIFA (USDA), USA
2015	Nano-fertilizers Synthesis and Testing for Agricultural Productivity and Environmental Quality	Principal Investigator	301.6	SGBSI, IIT Kharagpur

**RESEARCH EXPERIENCE**

2010-13	Assistant Scientist <i>Biological Systems Engineering, University of Wisconsin, Madison (USA)</i>
2007-10	Post Doctoral Researcher <i>Land, Air and Water Resources, University of California, Davis (USA)</i>
2003-07	Senior Research Fellow <i>Agricultural and Food Engineering, I.I.T, Kharagpur, India</i>
2001-02	Research Associate <i>KCAET Tavanur, Kerala Agricultural University, Kerala, India.</i>

**NON-TEACHING ACTIVITIES**

2014-16	Assistant Warden (mess)	Homi Jhahangir Babha Hall of Residence, IIT Kharagpur
2014-15	Faculty Advisor,(PG-LWRE)	AgFE Department, IIT Kharagpur
2014-15	ERP in-charge	AgFE Department, IIT Kharagpur
2014-15	Member, DAC (PGS&R)	AgFE Department, IIT Kharagpur
2014	Course co-ordinator, International Summer and Winter Term (ISWT)	IIT Kharagpur
2014	Member, Smart and Swacch Campus Initiative	IIT Kharagpur
2015	Co-coordinator (On Stage-Programmes), Agri-Expo 2015	AgFE Department, IIT Kharagpur
2014	Laboratory Development: Non-Point Source Pollution	AgFE Department, IIT Kharagpur

## **PROFESSIONAL ACTIVITES**

- 2015            **Associate Editor** of Journal on Agricultural Engineering (GSTF)
- 2014            **Editorial Board Member** of International Journal of Biomedical Science and Bioinformatics
- 2012-present   **Editorial Board Member of** Journal of Water Resources and Protection (JWARP)
- 2007-present   **Reviewer** for
- J. of Mathematical and Computer Modelling (Elsevier)
  - Computers and Geosciences (Elsevier)
  - Biosystems Engineering (Elsevier)
  - J. of Stochastic Environmental Research & Risk Assessment (Springer)
  - Irrigation Science (Springer),
  - Soil Science Society America J. (ASSS)
  - J. of Hydrologic Engineering (ASCE)
  - Hydrological Process (Wiley interScience)
- 2005            **Student Auditor** of BC Roy Hostel, I.I.T Kharagpur, India
- 2005            **Member** of American Society of Agricultural and Biological Engineers
- 2004            **Life Member** of Indian Science Congress
- 2003            **Member** of Institution of Engineers (India)

## **AWARDS AND ACHIEVEMENTS**

- 2010, 12, 13    Referred in Marques **Who is Who in the World**
- 2009            Referred in Marques **Who is Who in America**
- 2003-2007      **Volkswagen (Stiftung, Germany) fellowship** for pursuing Ph.D at I.I.T, Kharagpur, India
- 2005            Qualified for **Early Faculty Induction Programme** (AICTE, New Delhi)-promotes young and bright graduates towards teaching profession.
- 2001            Qualified for **National Eligibility Test** (NET-2001; ICAR, New Delhi)-requirement for an Assistant Professorship in Agricultural Universities.
- 1999- 2001     **KAU Fellowship** for pursuing M. Tech at Kerala Agricultural University, India
- 1997            Nominee for **Painting Competition** at the South Zone Youth Festival, Hyderabad, India.
- 1997            University **First Prize**, Intra-University Painting Competition, ANGR Agricultural University, Hyderabad, India.
- 1996            **Overall championship** in sports (College of Agric. Eng., Bapatla, India).
- 1992-1994      **A.P. State Merit Scholarship** for pursuing junior college education.
- 1989            Qualified in **Mathematics Olympiad** conducted by Department of Education, Govt. of India
- 1989            State **first rank** in A.P.R.S. Entrance Examination for pursuing High School Studies

## **SKILLS**

Work style	Able to work in team or independently; excellent analytical thinking and problem solving; excellent leadership, organizational, coordination, and interpersonal skills; experienced in project presentations
Computer	<i>Languages and software:</i> VB, C, FORTRAN, MATLAB, SAS, SRFR, Surfer, SigmaPlot, Arc GIS <i>Software development:</i> <b>ZIGASED</b> (simulating flow and sediment transport in irrigation systems); <b>WERA</b> (A complete solution for Wind Energy Resources Analysis)-available with "Wind Energy- Fundamental Resources Analysis and Economics" Springer, Verlag, UK.
Field	Tension lysimeters, TDR, Tensiometer, Neutron probe, ISCO (CR 10X, 23x) systems installation and monitoring.
Laboratory	Nutrient analysis using <b>Qickchem Lachat</b> and <b>Seal AQ2</b> discrete analyzer; XRF, Rheometer, compression test, Rainfall simulator, Greenhouse and growth chambers
Languages	English (fluent), Hindi (fluent), Telugu (fluent), Malayalam (basic knowledge)

## **PUBLICATIONS**

Dubey, A. and **Mailapalli, D.R.** (2015). Nanofertilisers, Nanopesticides, Nanosensors of Pest and Nanotoxicity in Agriculture. *Sustainable Agriculture Reviews-19*, Springer.

**Mailapalli, D.R.** and Thompson, A.M. (2015). Effect of Polyacrylamide Coated Biosolid on Phosphorus Movement in Soil-Plant-Water System. *Journal of Solid Waste Management* (accepted).

**Mailapalli, D.R.**, Benton, J., and Woods, T. (2015). Biomechanics of the Taekwondo axe kick: A review. *Journal of Human Sports and Exercise*, 10 (1): 141-145.

Raghuwanshi, N.S. **Mailapalli, D.R.** (2015). Irrigation Scheduling and Management, Hand book of Hydrology, Editor: Prof. V.P. Singh, Publisher: Springer (submitted).

**Milapalli, D.R.**, Misra, D. and Thompson, A.M. (2015). New Approach for Estimating Hydraulic Properties of Soils in Cold Regions. *Water Resources Research* (drafted).

**Mailapalli, D.R.**, Raghuwanshi, N.S., and Singh, R. (2013). Sediment transport model for surface irrigation systems. *Applied and Environmental Soil Science*.  
<http://dx.doi.org/10.1155/2013/957956>

**Mailapalli, D.R.**, Burger, M., Horwath, W.R., Wallender, W.W. (2013). Crop residue biomass effects on agricultural runoff quality. *Applied and Environmental Soil Science*.  
<http://dx.doi.org/10.1155/2013/805206>

**Mailapalli, D.R.**, and Thompson, A.M. (2012). Nitrogen leaching from Saybrook soil amended with biosolid and polyacrylamide," *Journal of Water Resource and Protection*, Vol. 4 No. 11, 2012, pp. 968-979.

**Mailapalli, D.R.**, Horwath, W., Wallender, W.W., and Burger, M. (2012). Infiltration, Runoff, and Export of Dissolved Organic Carbon from Furrow-Irrigated Forage Fields under Cover Crop and No-Till Management in the Arid Climate of California, *Irrigation and Drainage Engineering*, ASCE, 138

(1): 35-42.

**Mailapalli, D.R.** and A.M. Thompson. 2011. Sediment and Phosphorus Loads in Runoff and Leachate using Polyacrylamide Coated Milorganite<sup>TM</sup> and Gypsum. *Agricultural Water Management*.101: 27-34.

Raghuwanshi, N.S., Saha, R., **Mailapalli, D.R.**, Upadhyaya, S.K. (2011). Infiltration evaluations strategy for border irrigation management, *Irrigation and Drainage Engineering, ASCE*, 137 (9): 602-609.

Joyce, B.A., Wallender, W.W., and **Mailapalli, D.R.** (2010). Application of Pesticide Transport Model for Simulating Diazinon Runoff in California's Central Valley, *Journal of Hydrology*, 395 (1-2):79-90.

**Mailapalli, D.R.**, Wallender, W.W., Burger, M. and Horwath, W. (2010). Field length, tillage and crop residue effects on dissolved organic carbon in furrow irrigation, *Agricultural Water Management*, 98:29-37.

**Mailapalli, D.R.**, Wallender, W.W., Raghuwanshi, N. S., Singh, R (2010). Closure to "A quick method for estimating furrow infiltration by D.R. Mailapalli, W.W. Wallender, N.S. Raghuwanshi, R. Singh, *Journal of Irrigation and Drainage Engineering, ASCE*, 134(6): 788-795", *Journal of Irrigation and Drainage Engineering*, 136(1): 73-75.

**Mailapalli, D.R.**, Wallender, W.W., Singh, R., Raghuwanshi, N. S (2009). Closure to "Explicit integration algorithm for Green Ampt infiltration equation by D.R. Mailapalli, W.W. Wallender, R. Singh and N.S. Raghuwanshi., *Journal of Hydrologic Engineering, ASCE*, 14(2): 203-206" *Journal of Hydrologic Engineering*,14(10): 1195-1196.

**Mailapalli, D.R.**, Raghuwanshi, N.S., Singh, R. (2009) Sediment transport in furrow irrigation. *Irrigation Science*, 27: 449-456.

**Mailapalli, D.R.**, Singh, R., Raghuwanshi, N.S. (2009). Physically based model for simulating flow in furrow irrigation. I: Model development. *J. Irrig. Drain. Eng.* 135(6):739-746.

**Mailapalli, D.R.**, Raghuwanshi, N.S., and Singh, R. (2009). Physically based model for simulating flow in furrow irrigation. II: Model evaluation. *J. Irrig. Drain. Eng.* 135(6):747-754.

Pandey, D., Panda, S. N., Raghuwanshi, N. S. and **Mailapalli, D. R.** (2009) Development of crop staggered irrigation assessment tool (CSIDAT). *International Agricultural Engineering Journal, AAE*, 17 (1-4): 27-39.

**Mailapalli, D.R.**, Wallender, W.W., Singh, R., Raghuwanshi, N. S (2008). Explicit integration algorithm for Green Ampt infiltration equation. *Journal of Hydrologic Engineering, ASCE*, 14(2): 203-206.

**Mailapalli, D.R.**, Wallender, W.W., Raghuwanshi, N. S., Singh, R (2008). A quick method for estimating furrow infiltration. *Journal of Irrigation and Drainage Engineering, ASCE* ,134(6): 788-795.

**Mailapalli, D.R.**, Raghuwanshi, N.S., Singh, R., Schmitz, G.H., and Lennartz, F. (2008) Spatial and temporal variation of Manning's roughness coefficient in irrigation furrows. *Journal of Irrigation and Drainage Engineering*, ASCE , 134(2): 185-192.

**Mailapalli, D.R.**, Raghuwanshi, N. S., Singh, R., Schmitz, G. H., and Lennartz, F. (2008) Evaluation of Time Domain Reflectometry (TDR) for estimating furrow infiltration. *Irrigation Science*, 26(2): 161-168.

**Mailapalli, D.R.** and Marques, P.A.A., John Thomas, K. (2007) Performance evaluation of hydrocyclone filter for micro-irrigation system. *Eng. Agric., Jaboticabal*, 27(2): 373-382.

**Mailapalli, D.R.**, Raghuwanshi, N. S., and Singh, R. (2006). Development of a physically based 1D-infiltration model for seal formed irrigated soils. *Agricultural Water Management*, 84 (1-2):164-174.

Choudary, V. M., **Mailapalli, D.R.** and Jaiswal, C. S. (2006) Study of various parameters effecting ring infiltrometer's data. *Agricultural Water Management*, 83(1-2), 69-78.

Marques, P.A.A., Schmidt, W., Frizzone, J.A., and **Mailapalli, D.R.** (2006) Economical determination of storage phase for furrow irrigation system with free drainage. *Institution of Engineers (India) Journal-AG*, 87, 5-9.

**Mailapalli, D.R.**, and Thomas, J. (2005) Performance evaluation of hydrocyclone filter for drip irrigation-PSD approach. *Journal of Agricultural Engineering, ISAE*, 43(2):54-58.

### **Conference Proceedings:**

Islam, A. and **Mailapalli, D.R.** (2015). Comparison of Field Saturated Hydraulic Conductivity Methods for Top Soils. 49th Annual Convention and Symposium of the Indian Society of Agricultural Engineers (ISAE), PAU, Ludhiana, Punjab, India (Feb 23-25, 2015).

Das, D.M., Kumar, N., Singh, R. and **Mailapalli, D.R.** (2015). A Comparative Study of Water Use Efficiencies for Different Rice Management Practices. 49th Annual Convention and Symposium of the Indian Society of Agricultural Engineers (ISAE), PAU, Ludhiana, Punjab, India (Feb 23-25, 2015).

**Mailapalli, D.R.**, Stuntebeck, T.D., Thompson, A.M., and Roger, B.T. (2013). Effects of slope length and soil moisture content effects on stormwater runoff from turfgrass, presented at AWRA annual meeting (Wisconsin chapter), Brookfield, Wisconsin, March 7-8, 2013.

**Mailapalli, D.R.**, A.M. Thompson, and A. Roa. 2012. Phosphorus movement in soils following application of polyacrylamide coated biosolid. Oral presentation. ASABE 2012 Annual International Meeting. Dallas, Texas. July 29- Aug 1, 2012. Paper No. 121337806.

**Mailapalli, D.R.**, and Thompson, A.M. (2011). Effect of polyacrylamide coating on Milorganite<sup>TM</sup> for controlling sediment and phosphorus transport, Accepted In: 2011 Annual International Meeting, ASABE, Louisville, Kentucky, August 7-10, 2011.

**Mailapalli, D.R.**, Wallender, W.W., Horwath, W., Burger, M. (2009). Modeling water temperature in furrow irrigation systems. In: 2009 Annual International Meeting, ASABE, Reno, Nevada. USA. Paper #:095570, St. Joseph, Mich.

Raghuwanshi, N.S., Singh, R., **Mailapalli, D.R.** (2009). Furrow Irrigation Modelling: Present and Future. International Conference on Water, Environment, Energy & Society (WEES-2009), New



Delhi, India, Jan 12-16, 2009.

Mathew, S., Anilkumar, V. M, **Mailapalli, D.R.**, Gorate, D.U., Phillip, G.S., and Vishnu, B. (2008). Performance simulation of wind energy conversion systems (WECS) using the Wind Energy Resource Analysis (WERA) Model. The 1st International Conference of Institution of Engineering and Technology (IETBIC-2008), 25th May 2008 at Brunei Darussalam.

**Mailapalli, D.R.**, Wallender, W.W., Horwath, W., Ma, S., Lazicki, P. (2007). Residuejams and their effect on Infiltration, Runoff and Dissolved Organic Carbon (DOC) in Furrow Irrigation Systems. Submitted to AGU Fall-2007 meeting.

Kabir, Z., Wallender, W.W., Horwath, W., and **Mailapalli, D.R.** (2007). Plant residue and cover crop effects on runoff. Annual meet, Centre for Water Resources, Sacramento.CA, USA.

Shukla, S., **Mailapalli. D.R.**, Raghuwanshi, N.S., and Singh, R. (2006). A simple mathematical model for simulating water flow in furrow irrigation. International conference on agricultural engineering: Issues and Strategies. PSAE, Faculty of Agricultural Engineering and Technology, University of Agriculture, Fiasalabad, Pakistan. February, 16-18, 2006.

**Mailapalli, D.R.**, Raghuwanshi, N.S., and Singh, R. (2005). Genetic Algorithms: Global optimization technique for irrigation and drainage systems. International Symposium on Recent Advances in Water Resources Development and Management (RAWRDM-2005), IIT-Roorkee, India, Nov 23-25, 2005, pp: 285-291.

Shukla, S., **Mailapalli, D.R.**, Singh, R., Raghuwanshi, N.S., Schmitz, G.H., and Lennartz, F (2005). Modeling spatial and temporal variation of soil erosion in furrow irrigation. International Symposium on Recent Advances in Water Resources Development and Management (RAWRDM-2005), IIT-Roorkee, India, Nov 23-25, 2005, pp: 50-59.

**Mailapalli, D.R.**, Jain, D.K., Raghuwanshi, N.S., and Singh, R (2004). Estimation of Green-Ampt's hydraulic parameters for modeling infiltration. In: Natural Resources Engineering and Management and Agro-Environmental Engineering. ETAE-2004. Anamaya Publishers, New Delhi: 194-200.

**Mailapalli, D.R.**, and Thomas, J. (2003). Performance evaluation of hydrocyclone filter for micro irrigation system. In: Proceedings of the 37th annual convention of ISAE. 29-31, January, 2003, Rajasthan, India.