CIRRUCULUM VITAE

1. **Name** RAMANABABU KALIGATLA
2. **Date of birth** January 24, 1984
3. **Address with telephone/email etc.** Dr. Ramanababu Kaligatla
   Associate Professor
   Dept. of Mathematics and Computing
   IIT (ISM) Dhanbad
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4. **Research specialization** Differential and Integral Equations, Hydrodynamics, Wave-Structure Interactions
5. **IRINS Link** https://iitism.irins.org/profile/97544
6. **Google Scholar** hvk45Q8AAAAJ
7. **Educational Qualifications**

Sl.No.	Degree	Year	University/Institution
1	10^{th}	1999	MPL H School
2	12^{th}	2001	SBGM Junior College
3	BSc	2004	Andhra University, Visakhapatnam
4	MSc	2007	University of Hyderabad, Hyderabad
5	PhD	2013	Indian Institute of Technology Madras

8. **Research and Teaching Experience**

Organisation	Designation	Level	Period
IIT (ISM) Dhanbad	Associate Professor	Level 13A2	Since 13.04.2022 to till date
	Assistant Professor	Level 13A1	18.12.2020 to 12.04.2022
		8000 AGP (or) Level 12	18-12-2017 to 17.12.2020
		7000 AGP	18-12-2015 to 17-12-2017
		6000 AGP	18-12-2014 to 17-12-2015
IIT Kharagpur	Post-Doctoral Fellow	27-03-2014 to 16-12-2014	
ISI Kolkata	Visiting Scientist	01-02-2014 to 28-02-2014	
IIT Madras	Research Scholar	18-07-2008 to 19-11-2013	

9. Courses taught at UG/PG level

- Mathematics-I, Differential and Integral Calculus (UG Common)
- Mathematics-II (UG Common)
- Numerical Methods (Modular) (UG Common)
- Advanced Numerical Methods (Int. M. Tech [M&C])
- Methods of Applied Mathematics-I (UG, Common)
- Methods of Applied Mathematics-II (UG, Petroleum Eng.)
- Ordinary and Partial Differential Equations (MSc [M&C], Int. M. Tech [M&C])
- Numerical Techniques in Geophysics (MSc Tech. AGP)
- Computational Fluid Dynamics (MSc [M&C])
- Integral Equations and Calculus of Variations (Open Elective)

10. Course proposed

- Proposed an elective course entitled as "Integral Equations and Calculus of Variations" for the PG course MSc (M&C) and Int. M. Tech. (M&C)

11. Supervision of PhD/project students

Sl. No.	UG/PG/PhD Level	No. of Thesis (Completed)	No. of Students (on going)
1	MSc	9	2
2	Int. M.Tech.	7	2
3	Ph.D.	4	1

PhD awarded students' details:

i. S. Tabssum (2015DR0108)

Thesis defence date: 07.07.2021

Thesis title: Mild-slope approximation and allied methods for surface gravity wave scattering by porous breakwaters in the presence of seabed undulations.

ii. Manisha (2015DR0113)

Thesis defence date: 12.11.2021

Thesis title: Mild-slope approximation and allied methods for wave interaction with floating and submerged structures in the presence of sea-bed undulations.

iii. NM. Prasad (2016DR0060)

Thesis defence date: 16.08.2022

Thesis title: Wave interaction with permeable and impermeable structures in the presence of non-uniform seabed topography.

iv. Swati Singh (2019DR0187)

Thesis defence date: 06.11.2024

Thesis title: A semi-analytical study on wave scattering by breakwaters

12. Sponsored research projects

- A project proposal entitled "Water wave interaction with wave-absorbing breakwaters in the presence of uneven sea bottoms" was accepted by SERB, DST, Govt. of India with support Rs. 16,79,480 under ECR scheme in April 2018. It was ended in October 2021.

- A project proposal "Wave scattering by new-type floating barriers in deep water" was accepted by SERB, DST, Govt. of India in December 2022 with the funding Rs. 6,60,000 under MATRICS scheme for three years. The project has been started on 5th Jan 2023.

13. Research collaborators

- Prof. Birendra Nath Mandal (Retired)
  PhD, FNASc (India), FIMA (UK), CMath (UK), FWIGB (UK)
  NASI Senior Scientist Platinum Jubilee Fellow
  Physics and Applied Mathematics Unit
  Indian Statistical Institute
  203 BT Road, Kolkata 700108, INDIA
- Prof. S. R. Manam, Dept. of Mathematics, IIT Madras (PhD Supervisor).
- Prof. Trilochan Sahoo, Dept. of Ocean Engineering and Naval Architecture,
  IIT Kharagpur.
- Dr. S. Tabssum, Assistant Professor, VIT-AP University.
- Dr. NM Prasad, Assistant Professor, Govt. Eng. College, Aurangabad.
- Dr. Swati Singh, Assistant Professor, Siksha 'O' Anusandhan University, Bhubaneswar, Odisha.
- Dr. Harekrushna Behera, SRM University, Chennai.
- Dr. Santanu Koley, Bits Pilani, Hyderabad Campus.
- Dr. N. S. Vikramaditya, National Aerospace Laboratory, Bangalore.

14. Research publications in peer-reviewed journals

Sl. No.	Authors	Title of the paper	Journal's name	Vol., year of publication & Pages	SCI/SCIE Scopus/ ESCI and Quartile Index
25	S. Singh, R.B.Kaligatla*, B.N. Mandal	Wave scattering by ⊓-shaped breakwaters in finite depth water	Applied Ocean Research	**148,** 104014 (2024)	SCIE, Q1

24	R.B. Kaligatla*, N.M. Prasad	Topographical effects on wave scattering by an elastic plate floating on two-layer fluid	Mathematical Modelling and Analysis (Vilnius Tech.)	**29(2)**, 215–237 (2024)	SCIE, Q1
23	R.B. Kaligatla*, S. Singh, B.N. Mandal	Wave scattering by Pi-type breakwater floating in deep water	Journal of Engineering Mathematics (Springer)	**143,** 1-18 (2023)	SCIE, Q2
22	R.B. Kaligatla*, S. Singh	Wave interaction with a rigid porous structure under the combined effect of refraction-diffraction	Ocean Engineering (Elsevier)	**283,** 115042 (2023)	SCI, Q1
21	S. Singh R.B. Kaligatla*	The combined refraction-diffraction effect on water wave scattering by a flexible-porous structure	Journal of Fluids and Structures (Elsevier)	**116**, 103791 (2023)	SCIE, Q1
20	R.B. Kaligatla, S. Tabssum, T. Sahoo	Surface gravity wave interaction with a partial porous breakwater in a two-layer ocean having bottom undulations	Waves in Random and Complex Media (Taylor & Francis online)	(2021) DOI: 10.1080/17455030.2021.1976878	SCIE, Q1
19	N.M. Prasad R.B. Kaligatla*, S. Tabssum	Wave interaction with an array of porous walls in a two-layer ocean of varying bottom topography	Meccanica (Springer)	**56**, 1087–1108 (2021)	SCI, Q3
18	R.B. Kaligatla, Manisha Sharma, T. Sahoo	Wave interaction with a pair of submerged floating tunnels in the presence of an array of submerged porous breakwaters	Journal of Offshore Mechanics and Arctic Engineering (ASME)	**143(2)**, 021402 (2021)	SCI, Q3
17	S. Tabssum R. B. Kaligatla* T. Sahoo	Surface gravity wave interaction with a partial porous breakwater in the presence of bottom undulation	Journal of Engineering Mechanics (ASCE)	**146(9),** 04020088 (2020)	SCIE, Q2
16	Manisha, R.B. Kaligatla* T. Sahoo	Wave interaction with a submerged floating tunnel in the presence of a bottom mounted submerged porous breakwater	Applied Ocean Research (Elsevier)	**96**, 102069, (2020)	SCIE, Q1
15	S. Tabssum, R.B. Kaligatla*, T. Sahoo	Gravity wave interaction with a porous breakwater in a two-layer ocean of varying depth	Ocean Engineering (Elsevier)	**196**, 106816 (1-15), (2020)	SCI, Q1

14	R.B. Kaligatla*, N.M. Prasad S. Tabssum	Oblique interaction between water waves and a partially submerged rectangular breakwater.	Proceedings of the Institution of Mechanical Engineers, Part M: Journal of Engineering for the Maritime Environment (SAGE)	1-16 (2020)	SCIE, Q2
13	Manisha, R.B. Kaligatla*, T. Sahoo	Effect of bottom undulation for mitigating wave-induced forces on a floating bridge.	Wave Motion (Elsevier)	**89,** 166-184 (2019)	SCI, Q2
12	R.B. Kaligatla*, S. Tabssum, T. Sahoo	Effect of bottom topography on wave scattering by multiple porous barriers	Meccanica (Springer)	**53**, 887-903 (2018)	SCI, Q2
11	R.B. Kaligatla*, Manisha, T. Sahoo	Wave trapping by dual porous barriers near a wall in the presence of bottom undulation.	Journal of Marine Science and Application (Springer)	**16**, 286-297 (2017)	Scopus Q3
10	R.B. Kaligatla, S. R. Manam	Bragg resonance of membrane-coupled gravity waves over a porous bottom	International Journal of Advances in Engineering Sciences and Applied Mathematics (Springer)	**8(3),** 222-237 (2016)	ESCI Q3
9	H. Behera, R.B. Kaligatla, T. Sahoo	Wave trapping by porous barrier in the presence of step type bottom	Wave Motion (Elsevier)	**57**, 219-230 (2015)	SCI, Q2
8	R.B. Kaligatla, S. Koley, T. Sahoo	Trapping of surface gravity waves by a vertical flexible porous plate near a wall.	Journal of Applied Mathematics and Physics (Springer)	**66**, 2677-2702 (2015)	SCI, Q1
7	S. Koley, R.B. Kaligatla, T. Sahoo	Oblique wave scattering by a vertical flexible porous plate.	Studies in Applied Mathematics (Wiley)	**135 (1),** 1-34 (2015)	SCI, Q1
6	N.S. Vikramaditya, R.B. Kaligatla	Acoustic field in ducts with sinusoidal area variation	Journal of Vibration and Acoustics (ASME)	**136,** 014502, (2014)	SCIE, Q2
5	R. B. Kaligatla, S. R. Manam	Flexural gravity wave scattering by a nearly vertical porous wall	Journal of Engineering Mathematics (Springer)	**88**, 49-66 (2014)	SCI, Q3

4	S. R. Manam, R. B. Kaligatla	Membrane-coupled gravity wave scattering by a vertical barrier with a gap	The ANZIAM Journal (Cambridge Univ. Press)	**55**, 267-288 (2014)	SCIE, Q2
3	S. R. Manam, R. B. Kaligatla	Structure-coupled gravity waves past a vertical porous barrier	Journal of Engineering for the Maritime Environment (SAGE)	**227(3),** 266-283 (2013)	SCIE, Q3
2	S. R. Manam, R. B. Kaligatla	A mild-slope model for membrane-coupled gravity waves	Journal of Fluids and Structures (Elsevier)	**30**, 173-187 (2012)	SCI, Q1
1	S. R. Manam, R. B. Kaligatla	Effect of a submerged vertical barrier on flexural gravity waves	International Journal of Engineering Science (Elsevier)	**49**, 755-767 (2011)	SCI, Q1
*Corresponding author					

15. Papers presented in conferences

- S.R. Manam and R. B. Kaligatla, Effect of surface piercing barriers on membrane-coupled gravity waves. Advances in PDE modelling and computation, Ane Books Pvt. Ltd. (2013), 281-298. (Presented by SR Manam).
- S. Tabssum, R.B. Kaligatla, Wave trapping by a partial porous breakwater in water of varying depth. International Conference on Applications of Fluid Dynamics held in December 13-15, 2018 at VIT, Chennai, India. (Presented by S Tabssum).
- Manisha, R.B. Kaligatla, Wave interaction with a tunnel in a sea with bottom undulation. International Conference on Differential Equations and control Problems: Modeling, Analysis and computations held in June 17-19, 2019 at IIT Mandi, India. . (Presented by Manisha)
- R.B. Kaligatla, S. Singh, Wave scattering by partial flexible breakwater moored in water varying depth, ISTAM 2022, An international conference held in December 14-16, 2022 at IIT Mandi. (Presented by RB Kaligatla)

16. Short term visits for research collaboration

- Visited Dept. of Ocean Engineering and Naval Architecture, IIT Kharagpur during 14-22 May, 2015 through CDPA grant of Prof. T. Sahoo for research collaboration.

- Visited Dept. of Ocean Engineering and Naval Architecture IIT Kharagpur during 09-23 Dec, 2017 through CTS visitors program for research collaboration with Prof. T. Sahoo.

17. Academic/Administrative/Institutional Activities

- Worked as an examiner for IIT (ISM) JRF examination conducted at IIT Madras from 7-11 May, 2015.

- Working as tabulator to check student's marks of the various subjects of UG and PG and JRF levels of Department of Applied Mathematics and BTech common courses from 2nd Nov 2015 to 30th June 2019.
- Worked for scrutinizing the documents of candidates in connection with the M.Sc. / M.Sc. Tech. EE-2016 admission that was held on 16th July, 2016.
- Worked as a mentor for a first year BTech batch comprising 25 students for the academic year 2017-2018.
- Worked as a mentor for a first year BTech batch comprising 26 students for the academic year 2018-2019.
- In charge for updating quarterly/annual progress report of the Dept. of Applied Mathematics from 26th September 26, 2018.
- Member of documentation cell, Dept. of Mathematics and Computing from 6th March 2019.
- In-charge of seminar and conference rooms of Dept. of M&C from 4th June 2020.
- Worked as invigilator for several central and state government examinations including JEE (Advanced 2020)
- Member of DPGC, Dept. of Mathematics and Computing from 15th October 2020.
- Warden of Jasper Hostel from 1st July 2021-June 30 2023.
- JRF-In charge, Dept. of Mathematics and Computing, from 23rd December 2021.
- Member of IIT JAM scrutiny committee for the Dept. of M&C from May 2024.
- Member of DSC for several PhD students of IIT (ISM) Dhanbad.
- Member of IIT JAM scrutiny committee for the Dept. of M&C from May 2024.
- Member of DFSC of Dept. of Mathematics & Computing from 19th Nov 2024.

19. Other-Curricular activities

- Attended *Workshop on PDE and Related Analysis*, August 31 - September 18, 2009, conducted by IISc Mathematics Initiative (IMI), Department of Mathematics, Indian Institute of Science, Bangalore.
- Participated *International Congress of Mathematicians 2010*, Hyderabad.
- Attended *Advanced Instructional School on Mechanics*, 5-24 December, 2011 organized by School of Mathematics and Computer/Information Sciences, University of Hyderabad, Hyderabad.
- Attended *Induction Training/Orientation Programme* for college/university/teachers from Dec 28, 2017- Jan 25, 2018 at IIT(ISM) Dhanbad.
- Worked as paper setter for JEE Mains 2020 from 15.07.2019 to 19.07.2019, organised by National Testing Agency, Noida.
- Worked as treasurer for the National Conference on Modeling, Analysis and Simulation from Dec 16-18, 2019 conducted by Dept. of Mathematics and Computing, IIT (ISM) Dhanbad.
- IQAC Initiated Webinar Series Two days International Webinar on FLUID DYNAMICS AND ITS APPLICATIONS, from 28-29 May 2020, organized by Department of Mathematics, Government First Grade College, Vijayanagara, Bengaluru, Karnataka, India.

20. Invited talks delivered

- Delivered an invited talk on *Water wave scattering by a porous breakwater floating over a rectangular bottom mound* in the international conference on Advances in Differential Equations and Numerical Analysis organized by Dept. of Mathematics, IIT Guwahati, India from 12-15 October 2020**.**

21. Invited research talks conducted

- Conducted an invited talk on 5th August 2022 on the topic "An introduction to the unified transform method", delivered by Dr. Vishal Vasan, Reader at the International Centre for Theoretical Sciences, TIFR Bengaluru.
- Conducted an invited talk on 31st October 2023 on the topic "Inverse modeling and its applications to the identification of emission sources in the atmosphere", delivered by Prof. Maithili Sharan (Emeritus), FNA, FNASc, FNAE, Centre for Atmospheric Sciences, IIT Delhi.

22. Reviewer of journal and conference papers

- Results in Applied Mathematics
- Physics of Fluids
- Applied Mathematical Modelling
- Archive of Applied Mechanics
- Applied Ocean Research
- Ocean Engineering
- Proceedings of the Institution of Mechanical Engineers, Part M: Journal of Engineering for the Maritime Environment
- Ships and Offshore structures
- Marine Systems and Ocean Technology
- ISTAM Conference, India
- Ocean Dynamics
- International Journal of Advances in Engineering Sciences and Applied Mathematics

23. Membership of bodies

- Life member of "Society of Applied Mathematics", IIT(ISM) Dhanbad

24. Service to the nation

- Worked as Micro-Observer in the parliament election 2019 for Kenduadih region, Dhanbad constituency.
- Worked as Micro-Observer (PWD & 80+ Voter) on 08-Dec-2109 in the legislative assembly general election 2019 for Dhanbad constituency.
- Worked as Micro-Observer on 16-Dec-2109 in the legislative assembly general election 2019 for the region Chirkunda, Dhanbad Constituency.