CV (Prof. Santanu Koley)

1. Name in full: SANTANU KOLEY

2. a) Date of birth: 18-April-1989

   b) Gender: Male

3. Nationality: Indian

4. Field of specialization: Applied and Engineering Mathematics

5. Designation: Associate Professor

6. Address:

(a) Official: Office No: H027, Department of Mathematics,
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7. Academic career and professional attainments:

   (a)

Degree	Institution	Completion Year	Division/CGPA	Discipline
BSC	The University of Burdwan	2009	First Division	Mathematics (Hons), Physics, Chemistry
MSC	IIT Kharagpur	2011	First Division	Mathematics
PHD*	IIT Kharagpur	2016	NA	Applied and Engineering Mathematics

* PhD Thesis Title: Integral equation and allied methods for wave interaction with porous and flexible structures

(b)

Positions held	Institution	From (year)	To (year)	Remarks
SERB National Postdoc #	IIT Ropar	2016	2017	Worked in the mathematical modeling of wave-structure interaction project
Assistant Professor	DA-IICT Gandhinagar	2017	2018	Worked as Assistant Professor in Mathematics
INSPIRE Faculty	IISER Bhopal	2018	2018	Worked as INSPIRE Faculty in the mathematical modeling project
Assistant Professor	BITS-Pilani, Hyderabad Campus	2018	2023	Worked as Assistant Professor in the Dept. of Mathematics
Associate Professor	BITS-Pilani, Hyderabad Campus	2023	Till Date	Working as Associate Professor in the Dept. of Mathematics

\# Postdoctoral project title: Development of a general solution procedure based on coupled eigenfunction expansion-boundary element method to study the wave interaction with flexible porous/poro-elastic/viscoelastic breakwater systems in water of poro-elastic/viscoelastic undulated bottom bed

(c) Awards and recognitions:

(i) Awarded CSIR-Research Associate Fellowship in 2016, CSIR India.
(ii) Awarded SERB – National Postdoctoral Fellowship in 2016, SERB India.
(iii) Awarded DST-Inspire Faculty Fellowship (2017 July session), DST Inspire Division, India.
(iv) Awarded BITS-Pilani Additional Competitive Research Grant (2019 - 2021), BITS-Pilani.
(v) Awarded SERB-Core Research Grant (2022-2025), SERB, India.
(vi) Most Cited Articles 2020 award in from the journal "Engineering Analysis with Boundary Elements", Elsevier.
(vii) Assigned as Guest Editor for the Journal Water (Q1 SJR Ranking, IF: 3.530)
(viii) SERB-ITS Grant to participate at ICIAM 2019 Conference, Spain and ICIAM 2023 Conference, Japan.
(ix) Technical committee members of more than 40 Top-tier International Conferences
(x) Received "Very Good" grade in INSPIRE Faculty Project performance review by DST.
(xi) Received “Best Paper” award 2023 by "Engineering Analysis with Boundary Elements", Elsevier.

(d) Intellectual property, technological innovations, and new products:

Made Boundary Element Method based software tools to handle a large class of physical problems associated with ocean waves interaction with various types of breakwaters, wave barriers and wave energy converter devices in real sea conditions.

(e) Other relevant information: Reviewer of the Journals: Engineering Analysis with Boundary Elements, Journal of Fluid Mechanics, Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, Physics of Fluids, Applied Mathematical Modeling, Studies in Applied mathematics, etc., and many more.

Sponsored Projects:

Project Title	Funding Agency	Sanctioned Amount (in terms of Lakhs)	Project Duration
Modeling the hydrodynamics of various wave energy converter devices in real sea conditions	DST (Inspire Faculty Project)	35 Lakhs	01/04/2019 to 31/03/2024
Mathematical modelling of oscillating water column wave energy converter devices under irregular and multidirectional incident waves	SERB (Core Research Grant)	21.87 lakhs	25/02/2022 to 24/02/2025
Hypersingular Integral Equation Techniques for Wave-structure Interaction Problem	BITS-Pilani (Research Initiation Grant)	2.00 Lakhs	26/03/2019 to 25/03/2021
Modeling the Hydrodynamics of porous breakwaters in ports and harbors under irregular and multi-directional incident waves	BITS-Pilani (Additional Competitive Research Grant)	7.00 Lakhs	19/09/2019 to 18/09/2021
Making Transcripts and Lecture Notes for the Marine Hydrodynamics NPTEL course	IIT Madras (Created NPTEL Course Lecture Notes and Transcript)	0.55 Lakhs	01/09/2018 to 31/08/2019
Modelling and development of hybrid solar-wave energy harvester (SOLWAVE)	BITS-Pilani (Cross-Disciplinary Research Project)	44 lakhs	15/09/2023 to 14/09/2028
Create and use of graphics in the teaching and learning processes	TLC, BITS-Pilani	0.6 Lakhs	2023-2024 First and Second Semesters
Multi-objective optimisation for drone propeller designs	BITS-Pilani and RMIT, Australia Joint PhD Project	16.12 Lakhs + RMIT One year standard PhD fellowship in AUD	18/01/2024 to 17/01/2028

PhD Student Guidance:

Name of the PhD Student	Thesis Title and PhD Viva Date
Kottala Panduranga	Mathematical Techniques for Water Wave Interaction with Porous and Flexible Structures

	PhD Defense 05/05/2022
Kshma Trivedi	Mathematical Modeling of Wave Energy Converter Devices in Real Sea Conditions PhD Defense 19/12/2023
Vipin V	Mathematical Modeling, Prediction and Optimization of Wave Energy Converter Devices PhD Thesis Pre-submission Seminar: 27/02/2024
Parothidil Anjusree Krishnan	Ongoing (Area of Research: Time domain analysis of wave energy converter devices)
Santanu Kumar Dash	Ongoing (Area of Research: Integral Equations, Hydrodynamics)
Kailash Chand Swami	Ongoing (Area of Research: Integral Equations, Hydrodynamics)
Amya Ranjan Ray	Ongoing (Area of Research: Computational Fluid Dynamics)
Subhendu Paul	Ongoing (Area of Research: Integral Equations, Homotopy Analysis Method)
Kakani Ketana	Ongoing (Area of Research: Machine Learning, Blood Flow Modeling)
Rajdip Dey	Ongoing (Area of Research: Boundary element method, ocean wave and solar energy harvester)
S Maheswaran	Ongoing (Area of Research: CFD, Drone modeling, Optimization, Machine Learning)

Postdoctoral Student Guidance:

Name of the Researcher	Area of Research
Kshma Trivedi	Mathematical modeling, Boundary element method, Wave energy converter devices 20-December 2023 to Till Date

9. Research Experience:

Prof. Santanu Koley's broad area of research is the mathematical modeling of real engineering problems that arise in the field of Ocean/Coastal Engineering. In particular, emphasis is given to develop numerical tools for a class of physical problems associated with wave interaction with porous and flexible structures. The class of problems analyzed are based on suitable applications of the Green's function technique, eigenfunction expansion method, integral equation techniques, which include boundary element method, the system of Fredholm integral equation, hypersingular integral equation, and integro-differential equation techniques. These solution techniques are very effective, robust, and efficient. Further, in certain cases, appropriate coupling between the boundary element method with the eigenfunction expansion method and the finite difference method has been done to take into account variable shapes of the structures and seabed as well as complex structural configurations. In most cases, energy identities are derived and used for validation purposes. In certain cases, small-scale experiments in the wave tank are performed. Various physical phenomena associated with the wave interaction with flexible and porous structures are analyzed. The effect of internal waves along with the effect of surface waves on the coastal structures is studied rigorously. Further, Prof. Koley has worked on the mathematical modeling of various wave energy converter devices in real sea conditions. Major emphasis is given towards the development of the coupled boundary element method and eigenfunction expansion method-based numerical solution tools and optimization of various parameters to achieve maximum efficiency from the WEC devices. Both the regular and irregular incident waves are considered for the analysis using the well-known wave spectrum concept. The effect of the undulated seabed on the Bragg resonance phenomenon is analyzed in a detailed manner. Moreover, the local wave climate of various locations where the WEC prototypes were built is considered using appropriate sea states and their frequencies of occurrences.

10. Statement of significant research contributions (within 500 words):

- For wave scattering by breakwaters and wave barriers, major emphasis is given to show the effect of structural porosity and various other parameters like the inertial and friction coefficients (for thick porous structures) and perforation-effect Keulegan-Carpenter number (for thin slatted screens) on wave scattering and wave energy dissipation. It was demonstrated that structural porosity plays an important role in reducing the wave forces on the breakwaters and wave barriers. The study on wave trapping

by porous and flexible structures for finding optimum load on sea walls in single and two-layer fluids are some of Prof. Koley's unique contributions to coastal engineering problems. Moreover, the development of appropriate coupling techniques between two different numerical tools to solve the wave-structure interaction problems, which are generally non-Strum Liouville types having higher-order boundary conditions, is one of Prof. Koley's unique research contributions.

- Prof. Koley has studied and mathematically modeled a number of diversified real engineering problems. For ex: he has studied (i) semicircular caisson breakwater placed on the porous seabed (Prototypes were constructed at Miyazaki port Japan and also in Tianjin port of China), (ii) trapezoidal porous breakwater placed on the undulated seabed (Prototype were constructed at Puerto Marina, Spain, and Ennore, Chennai), (iii) floating flexible vertical plates and membranes which has applications as temporary wave barriers for the protection of sophisticated offshore operations and also acted as containment boom for floating oil slicks, (iv) horizontal floating flexible plates which have application in Arctic/Antarctic sea ice modeling, mobile offshore base and VLFS (very large floating structure) for ocean space utilization, (v) effect of internal waves on the breakwaters (breakwaters placed in estuary regions). In summation, Prof. Koley's research outcome is immensely helpful for coastal engineers to design and construct breakwaters and wave barriers in ports and harbors.

- In the field of mathematical modeling of wave energy converter devices, it was demonstrated that for OWC type devices, the resonance in the efficiency curve occurs for certain suitable combinations of chamber width and the submergence depth of the front wall of the OWC device. This concludes that with the proper structural design of the OWC device, 100% efficiency can be obtained. Further, the sloping front wall of the OWC devices is shown to be effective as compared to the vertical front wall of the OWC devices. Moreover, it was shown that maximum efficiency could be achieved with appropriate combinations of the turbine rotor diameter and rotational speed. In certain problems, the Bretschneider wave spectrum is taken as the incident wave spectrum along with nine sea states representing the local wave climate at Pico, Portugal's OWC plant site. Under this local wave climate, it was demonstrated that maximum efficiency for LIMPET and circular type OWC occur for the moderate draft, chamber length, and chamber radius.

- Prof. Koley has completed one sponsored project as PI, which is based on the "development of noble numerical solution techniques to study wave interaction with poroelastic/viscoelastic structures/seabed." In 2019, Prof. Koley got one more project of Rs. 35 Lakhs as PI (through Inspire Faculty Award Scheme) on "modeling the hydrodynamics of various wave energy converter devices in real sea conditions." Further, Prof. Koley also received the CRG Project of 22 lakhs as PI on "Mathematical modeling of oscillating water column wave energy converter devices under irregular and multidirectional incident waves." Prof. Koley has published so far 75 refereed journals papers (all are SCI/Scopus Indexed and have high impact factors).

11. List of top ten percentile (or minimum 5) of peer-reviewed publications of the author included in a standard bibliometric database (e.g., Web of Science) or technology transferred with links (to support the significant research contributions mentioned above in 500 words).

No.	Paper Details (Published)	Remarks
*1.	Panduranga, K., Koley, S., & Meylan, M. H. (2023). A hybrid boundary element method based model for wave interaction with submerged viscoelastic plates with an arbitrary bottom profile in frequency and time domain. Physics of Fluids, 35(4). URL: https://doi.org/10.1063/5.0143412	Major work is done by S. Koley.
*2.	Trivedi, K., & Koley, S. (2023). Performance of a hybrid wave energy converter device consisting of a piezoelectric plate and oscillating water column device placed over an undulated seabed. Applied Energy, 333, 120627. URL: https://doi.org/10.1016/j.apenergy.2022.120627	Major work is done by S. Koley.
*3.	Vipin, V., & Koley, S. (2022). Mathematical modeling of a submerged piezoelectric wave energy converter device installed over an undulated seabed. Renewable Energy, 200, 1382-1392. URL: https://doi.org/10.1016/j.renene.2022.10.051	Major work is done by S. Koley.
*4.	Panduranga, K., & Koley, S. (2022). Hydroelastic analysis of very large rectangular plate floating on shallow water. Zeitschrift für angewandte Mathematik und Physik, 73, 1-22. URL: https://doi.org/10.1007/s00033-021-01673-w	Major work is done by S. Koley.
*5.	Trivedi, K., & Koley, S. (2021). Mathematical modeling of breakwater-integrated oscillating water column wave energy converter devices under irregular incident waves. Renewable Energy, 178, 403-419. URL: https://doi.org/10.1016/j.renene.2021.06.075	Major work is done by S. Koley.
*6.	Koley, S., & Sahoo, T. (2021). Integral equation technique for water wave interaction by an array of vertical flexible porous wave barriers. ZAMM-Journal of Applied Mathematics and Mechanics/Zeitschrift für Angewandte Mathematik und Mechanik, 101(5), e201900274. URL: https://doi.org/10.1002/zamm.201900274	Major work is done by S. Koley.

*7.	Koley, S. (2020). Water wave scattering by floating flexible porous plate over variable bathymetry regions. Ocean Engineering, 214, 107686. URL: https://doi.org/10.1016/j.oceaneng.2020.107686	Single author paper
*8.	Koley, S. (2019). Wave transmission through multilayered porous breakwater under regular and irregular incident waves. Engineering Analysis with Boundary Elements, 108, 393-401. URL: https://doi.org/10.1016/j.enganabound.2019.08.011	Single author paper
*9.	Kar, P., Koley, S., & Sahoo, T. (2018). Scattering of surface gravity waves over a pair of trenches. Applied Mathematical Modelling, 62, 303-320. URL: https://doi.org/10.1016/j.apm.2018.06.002	Major work is done by S. Koley.
*10.	Koley, S., Kaligatla, R. B., & Sahoo, T. (2015). Oblique wave scattering by a vertical flexible porous plate. Studies in Applied Mathematics, 135(1), 1-34. URL: https://doi.org/10.1111/sapm.12076	Major work is done by S. Koley.

12. Publications, patents, and copyrighted material:

(a) SCI indexed Hight impact factor Journal Papers

No.	Paper Details (Published), SCI Hight impact factor Journal Papers	Remarks
*1.	Panduranga, K., Koley, S., & Meylan, M. H. (2023). A hybrid boundary element method based model for wave interaction with submerged viscoelastic plates with an arbitrary bottom profile in frequency and time domain. Physics of Fluids, 35(4). URL: https://doi.org/10.1063/5.0143412	Major work is done by S. Koley.
*2.	Mondal, S., & Koley, S. (2023). Effect of non-Gaussian coloured noise on ambient energy harvesting. Energy Reports, 9, 131-135. URL: https://doi.org/10.1016/j.egyr.2023.08.046	Major work is done by S. Koley.
*3.	Trivedi, K., Koley, S., & Ray, A. R. (2023). CFD based modeling of OWC device positioned over stepped bottom. Energy Reports, 9, 362-366. URL: https://doi.org/10.1016/j.egyr.2023.09.035	Major work is done by S. Koley.
*4.	Vipin, V., & Koley, S. (2023). Design optimization of a submerged piezoelectric wave energy converter device using an artificial neural network model. Energy Reports, 9, 322-326. URL: https://doi.org/10.1016/j.egyr.2023.09.036	Major work is done by S. Koley.
*5.	Trivedi, K., Ray, A. R., Krishnan, P. A., Koley, S., & Sahoo, T. (2023). Hydrodynamics of LIMPET type OWC device under Stokes second-order waves. Ocean Engineering, 286, 115605. URL: https://doi.org/10.1016/j.oceaneng.2023.115605	Major work is done by S. Koley.
*6.	Trivedi, K., & Koley, S. (2023). Mathematical modeling of oscillating water column wave energy converter devices placed over an undulated seabed in a two-layer fluid system. Renewable Energy, 216, 119092. URL: https://doi.org/10.1016/j.renene.2023.119092	Major work is done by S. Koley.
*7.	Vipin, V., Trivedi, K., & Koley, S. (2023). Optimization of parameters of the OWC wave energy converter device using MLP and XGBoost models. Results in Physics, 55, 107163. URL: https://doi.org/10.1016/j.rinp.2023.107163	Major work is done by S. Koley.
*8.	Kumar, U. V., Saha, S., & Koley, S. (2023). A comparative study of wave scattering by non-porous and porous flexible plates in the presence of a submerged porous structure. Meccanica, 1-18. URL: https://doi.org/10.1007/s11012-023-01679-w	Major work is done by S. Koley.
*9.	Trivedi, K., & Koley, S. (2023). Performance of a hybrid wave energy converter device consisting of a piezoelectric plate and oscillating water column device placed over an undulated seabed. Applied Energy, 333, 120627. URL: https://doi.org/10.1016/j.apenergy.2022.120627	Major work is done by S. Koley.
*10.	Rodríguez, A. A. M., Trivedi, K., Koley, S., Martinez, I. O., Mendoza, E., Vanegas, G. P., & Silva, R. (2023). Improved hydrodynamic performance of an OWC device based on a Helmholtz resonator. Energy, 273, 127299. URL: https://doi.org/10.1016/j.energy.2023.127299	Major work is done by S. Koley.
*11.	Koley, S., Panduranga, K., Trivedi, K., Al-Ragum, A., & Neelamani, S. (2023). Numerical and experimental modeling of wave-induced forces on submarine pipeline buried in the soil of different engineering properties. Ocean Engineering, 273, 113941. URL: https://doi.org/10.1016/j.oceaneng.2023.113941	Major work is done by S. Koley.
*12.	Vipin, V., Trivedi, K., & Koley, S. (2022). Performance of a submerged piezoelectric wave energy converter device in time domain. Energy Reports, 8, 309-314. URL: https://doi.org/10.1016/j.egyr.2022.10.247	Major work is done by S. Koley.

*13.	Mondal, S., & Koley, S. (2022). Ambient energy harvesting from colored multiplicative noise. Energy Reports, 8, 129-133. URL: https://doi.org/10.1016/j.egyr.2022.10.258	Major work is done by S. Koley.
*14.	Trivedi, K., & Koley, S. (2022). Hydrodynamics of an U-shaped OWC device in a two-layer fluid system. Energy Reports, 8, 106-111. URL: https://doi.org/10.1016/j.egyr.2022.10.250	Major work is done by S. Koley.
*15.	Vipin, V., & Koley, S. (2022). Mathematical modeling of a submerged piezoelectric wave energy converter device installed over an undulated seabed. Renewable Energy, 200, 1382-1392. URL: https://doi.org/10.1016/j.renene.2022.10.051	Major work is done by S. Koley.
*16.	Trivedi, K., & Koley, S. (2022). Time-domain analysis of quarter-circle shaped oscillating water column device. Energy Reports, 8, 431-437. URL: https://doi.org/10.1016/j.egyr.2022.05.173	Major work is done by S. Koley.
*17.	Vipin, V., Trivedi, K., & Koley, S. (2022). Performance of a submerged piezoelectric wave energy converter device floating over an undulated seabed. Energy Reports, 8, 182-188. URL: https://doi.org/10.1016/j.egyr.2022.05.165	Major work is done by S. Koley.
*18.	Koley, S., Vijay, K. G., Nishad, C. S., & Sundaravadivelu, R. (2022). Performance of a submerged flexible membrane and a breakwater in the presence of a seawall. Applied Ocean Research, 124, 103203. URL: https://doi.org/10.1016/j.apor.2022.103203	Major work is done by S. Koley.
*19.	Vijay, K. G., Koley, S., Trivedi, K., & Nishad, C. S. (2022). Hydrodynamic coefficients of a floater near a partially reflecting seawall in the presence of an array of caisson blocks. Journal of Offshore Mechanics and Arctic Engineering, 144(2). URL: https://doi.org/10.1115/1.4052635	Major work is done by S. Koley.
*20.	Choudhary, A., Trivedi, K., Koley, S., & Martha, S. C. (2022). On the scattering and radiation of water waves by a finite dock floating over a rectangular trench. Wave Motion, 110, 102869. URL: https://doi.org/10.1016/j.wavemoti.2021.102869	Major work is done by S. Koley.
*21.	Trivedi, K., & Koley, S. (2022). Annual mean efficiency of the duct type OWC in regional ocean environments. Energy Reports, 8, 346-351. URL: https://doi.org/10.1016/j.egyr.2022.01.077	Major work is done by S. Koley.
*22.	Panduranga, K., & Koley, S. (2022). Hydroelastic analysis of very large rectangular plate floating on shallow water. Zeitschrift für angewandte Mathematik und Physik, 73, 1-22. URL: https://doi.org/10.1007/s00033-021-01673-w	Major work is done by S. Koley.
*23.	Trivedi, K., & Koley, S. (2022). Hydrodynamic performance of the dual-chamber oscillating water column device placed over the undulated sea bed. Energy Reports, 8, 480-486. URL: https://doi.org/10.1016/j.egyr.2021.11.159	Major work is done by S. Koley.
*24.	Panduranga, K., & Koley, S. (2021). Water waves scattering by cylindrical dual porous floating breakwaters connected with a rectangular porous box and floating over an undulated seabed. Meccanica, 56(12), 3001-3024. URL: https://doi.org/10.1007/s11012-021-01442-z	Major work is done by S. Koley.
*25.	Trivedi, K., & Koley, S. (2021). Mathematical modeling of breakwater-integrated oscillating water column wave energy converter devices under irregular incident waves. Renewable Energy, 178, 403-419. URL: https://doi.org/10.1016/j.renene.2021.06.075	Major work is done by S. Koley.
*26.	Kar, P., Koley, S., Trivedi, K., & Sahoo, T. (2021). Bragg scattering of surface gravity waves due to multiple bottom undulations and a semi-infinite floating flexible structure. Water, 13(17), 2349. URL: https://doi.org/10.3390/w13172349	Major work is done by S. Koley.
*27.	Panduranga, K., Koley, S., & Sahoo, T. (2021). Surface gravity wave scattering by multiple slatted screens placed near a caisson porous breakwater in the presence of seabed undulations. Applied Ocean Research, 111, 102675. URL: https://doi.org/10.1016/j.apor.2021.102675	Major work is done by S. Koley.
*28.	Choudhary, A., Koley, S., & Martha, S. C. (2021). Coupled eigenfunction expansion–boundary element method for wave scattering by thick vertical barrier over an arbitrary seabed. Geophysical & Astrophysical Fluid Dynamics, 115(1), 44-60. URL: https://doi.org/10.1080/03091929.2020.1743989	Major work is done by S. Koley.
*29.	Koley, S., & Sahoo, T. (2021). Integral equation technique for water wave interaction by an array of vertical flexible porous wave barriers. ZAMM-Journal of Applied Mathematics and Mechanics/Zeitschrift für Angewandte Mathematik und Mechanik, 101(5), e201900274. URL: https://doi.org/10.1002/zamm.201900274	Major work is done by S. Koley.
*30.	Koley, S., Panduranga, K., Almashan, N., Neelamani, S., & Al-Ragum, A. (2020). Numerical and experimental modeling of water wave interaction with rubble mound offshore porous breakwaters. Ocean Engineering, 218, 108218. URL: https://doi.org/10.1016/j.oceaneng.2020.108218	Major work is done by S. Koley.
*31.	Koley, S. (2020). Water wave scattering by floating flexible porous plate over variable bathymetry regions. Ocean Engineering, 214, 107686. URL: https://doi.org/10.1016/j.oceaneng.2020.107686	Single author paper.

*32.	Koley, S., & Trivedi, K. (2020). Mathematical modeling of oscillating water column wave energy converter devices over the undulated sea bed. Engineering Analysis with Boundary Elements, 117, 26-40. URL: https://doi.org/10.1016/j.enganabound.2020.03.017	Major work is done by S. Koley.
*33.	Kar, P., Koley, S., & Sahoo, T. (2020). Bragg scattering of long waves by an array of trenches. Ocean Engineering, 198, 107004. URL: https://doi.org/10.1016/j.oceaneng.2020.107004	Major work is done by S. Koley.
*34.	Koley, S. (2019). Wave transmission through multilayered porous breakwater under regular and irregular incident waves. Engineering Analysis with Boundary Elements, 108, 393-401. URL: https://doi.org/10.1016/j.enganabound.2019.08.011	Single author paper.
*35.	Kar, P., Koley, S., & Sahoo, T. (2018). Scattering of surface gravity waves over a pair of trenches. Applied Mathematical Modelling, 62, 303-320. URL: https://doi.org/10.1016/j.apm.2018.06.002	Major work is done by S. Koley.
*36.	Koley, S., & Sahoo, T. (2018). An integro-differential equation approach to study the scattering of water waves by a floating flexible porous plate. Geophysical & Astrophysical Fluid Dynamics, 112(5), 345-356. URL: https://doi.org/10.1080/03091929.2018.1530772	Major work is done by S. Koley.
*37.	Koley, S., Mondal, R., & Sahoo, T. (2018). Fredholm integral equation technique for hydroelastic analysis of a floating flexible porous plate. European Journal of Mechanics-B/Fluids, 67, 291-305. URL: https://doi.org/10.1016/j.euromechflu.2017.10.004	Major work is done by S. Koley.
*38.	Koley, S., & Sahoo, T. (2017). Wave interaction with a submerged semicircular porous breakwater placed on a porous seabed. Engineering Analysis with Boundary Elements, 80, 18-37. URL: https://doi.org/10.1016/j.enganabound.2017.02.019	Major work is done by S. Koley.
*39.	Koley, S., & Sahoo, T. (2017). Scattering of oblique waves by permeable vertical flexible membrane wave barriers. Applied Ocean Research, 62, 156-168. URL: https://doi.org/10.1016/j.apor.2016.12.005	Major work is done by S. Koley.
*40.	Koley, S., & Sahoo, T. (2017). Oblique wave scattering by horizontal floating flexible porous membrane. Meccanica, 52, 125-138. URL: https://doi.org/10.1007/s11012-016-0407-1	Major work is done by S. Koley.
*41.	Kaligatla, R. B., Koley, S., & Sahoo, T. (2015). Trapping of surface gravity waves by a vertical flexible porous plate near a wall. Zeitschrift für angewandte Mathematik und Physik, 66, 2677-2702. URL: https://doi.org/10.1007/s00033-015-0521-2	Major work is done by S. Koley.
*42.	Behera, H., Koley, S., & Sahoo, T. (2015). Wave transmission by partial porous structures in two-layer fluid. Engineering Analysis with Boundary Elements, 58, 58-78. URL: https://doi.org/10.1016/j.enganabound.2015.03.010	Major work is done by S. Koley.
*43.	Koley, S., Kaligatla, R. B., & Sahoo, T. (2015). Oblique wave scattering by a vertical flexible porous plate. Studies in Applied Mathematics, 135(1), 1-34. URL: https://doi.org/10.1111/sapm.12076	Major work is done by S. Koley.
*44.	Koley, S., Behera, H., & Sahoo, T. (2015). Oblique wave trapping by porous structures near a wall. Journal of Engineering Mechanics, 141(3), 04014122. URL: https://doi.org/10.1061/(ASCE)EM.1943-7889.0000843	Major work is done by S. Koley.
*44.	Koley, S., Sarkar, A., & Sahoo, T. (2015). Interaction of gravity waves with bottom-standing submerged structures having perforated outer-layer placed on a sloping bed. Applied Ocean Research, 52, 245-260. URL: https://doi.org/10.1016/j.apor.2015.06.003	Major work is done by S. Koley.

(b) Scopus-Indexed Journal Papers

No.	Paper Details (Published)	Remarks
1.	Trivedi, K., Ray, A. R., Krishnan, P. A., Koley, S., & Sahoo, T. (2023). Hydrodynamics of an OWC Device in Irregular Incident Waves Using RANS Model. Fluids, 8(1), 27. URL: https://doi.org/10.3390/fluids8010027	Major work is done by S. Koley.
2.	Ray, A. R., Krishnan, P. A., & Koley, S. (2023). Performance of OWC device under Stokes second-order waves. Materials Today: Proceedings. URL: https://doi.org/10.1016/j.matpr.2023.10.073	Major work is done by S. Koley.
3.	Trivedi, K., & Koley, S. (2023). Modeling the viscoelasticity of floating membrane in water waves. Materials Today: Proceedings, 72, 222-226. URl: https://doi.org/10.1016/j.matpr.2022.07.047	Major work is done by S. Koley.
4.	Panduranga, K., & Koley, S. (2022). Oblique wave scattering by a rectangular porous floating breakwater with slotted screens over a sill-type seabed. International Journal of Computational Methods and Experimental Measurements, 10(2), 172-186. URL: https://www.witpress.com/elibrary/cmem-volumes/10/2/2886	Major work is done by S. Koley.
5.	Koley, S. (2022). Convergence analysis of havelock-type eigenfunction expansions for hydroelastic problems in water having infinite depth. Journal of the Indian Mathematical Society, 89. URL: https://doi.org/10.18311/jims/2022/25870	Major work is done by S. Koley.

6.	Koley, S., Trivedi, K., & Vipin, V. (2022). Hydroelastic analysis of floating long viscoelastic plate in shallow water. Materials Today: Proceedings, 49, 2234-2238. URL: https://doi.org/10.1016/j.matpr.2021.09.334	Major work is done by S. Koley.
7.	Koley, S., & Panduranga, K. (2021, November). Convergence of eigenfunction expansions for flexural gravity waves in infinite water depth. In Journal of Physics: Conference Series (Vol. 2070, No. 1, p. 012006). IOP Publishing. URL: https://iopscience.iop.org/article/10.1088/1742-6596/2070/1/012006	Major work is done by S. Koley.
8.	Trivedi, K., & Koley, S. (2021, May). Performance of an OWC device placed over stepped bottom in random waves environment. In Journal of Physics: Conference Series (Vol. 1921, No. 1, p. 012121). IOP Publishing. URL: https://iopscience.iop.org/article/10.1088/1742-6596/1921/1/012121	Major work is done by S. Koley.
9.	Koley, S., & Trivedi, K. (2021, May). Performance of an OWC device placed over multi-stepped bottom in random waves environment. In Journal of Physics: Conference Series (Vol. 1921, No. 1, p. 012129). IOP Publishing. URL: https://iopscience.iop.org/article/10.1088/1742-6596/1921/1/012129	Major work is done by S. Koley.
10.	Trivedi, K., Koley, S., & Panduranga, K. (2021). Performance of an U-shaped oscillating water column wave energy converter device under oblique incident waves. Fluids, 6(4), 137. URL: https://doi.org/10.3390/fluids6040137	Major work is done by S. Koley.
11.	Koley, S., & Panduranga, K. (2021). Energy balance relations for flow through thick porous structures. International Journal of Computational Methods and Experimental Measurements, 9(1), 28-37. URL: https://www.witpress.com/elibrary/cmem-volumes/9/1/2748	Major work is done by S. Koley.
12.	Trivedi, K., & Koley, S. (2021). Effect of varying bottom topography on the radiation of water waves by a floating rectangular buoy. Fluids, 6(2), 59. URL: https://doi.org/10.3390/fluids6020059	Major work is done by S. Koley.
13.	Panduranga, K., & Koley, S. (2021). Water wave trapping by floating inverse T-shaped porous breakwater, Structural Integrity and Life, 21, S51-S54 URL: http://divk.inovacionicentar.rs/ivk/ivk21SIconts.html	Major work is done by S. Koley.
14.	Trivedi, K., & Koley, S. (2021). Motions of a freely floating thick rigid structure over asymmetric trenches, Structural Integrity and Life, 21, S8-S12 URL: http://divk.inovacionicentar.rs/ivk/ivk21SIconts.html	Major work is done by S. Koley.
15.	Koley, S., & Sahoo, T. (2017). Oblique wave trapping by vertical permeable membrane barriers located near a wall. Journal of Marine Science and Application, 16(4), 490-501. URL: https://doi.org/10.1007/s11804-017-1432-8	Major work is done by S. Koley.

(c) Scopus-Indexed Full-length Conference Papers

No.	Paper Details (Published)	Remarks
1.	Dash, S. K., Swami, K. C., Trivedi, K., & Koley, S. (2023, February). Boundary Element Method for Water Wave Interaction with Semicircular Porous Wave Barriers Placed over Stepped Seabed. In International Conference on Mathematical Modeling and Computational Science (pp. 95-105). Singapore: Springer Nature Singapore. URL: https://doi.org/10.1007/978-981-99-3611-3_8	Major work is done by S. Koley.
1.	Vipin, V., & Koley, S. (2023, May). Estimation of Parameters of Some Continuous Distributions Using Frequency Ratio Method Based on Local Information. In Mathematical Modeling, Computational Intelligence Techniques and Renewable Energy: Proceedings of the Third International Conference, MMCITRE 2022 (pp. 319-327). Singapore: Springer Nature Singapore. URL: https://doi.org/10.1007/978-981-19-9906-2_26	Major work is done by S. Koley.
2.	Trivedi, K., Ray, A. R., & Koley, S. (2023, March). Performance of OWC Device in Random Ocean Waves. In 2023 Second International Conference on Electronics and Renewable Systems (ICEARS) (pp. 147-150). IEEE. URL:https://ieeexplore.ieee.org/document/10085397	Major work is done by S. Koley.
3.	Satpathi, D. K., Koley, S., & Haragopal, V. V. (2022, November). Parameter estimation of log-normal distribution based on local information. In AIP Conference Proceedings (Vol. 2516, No. 1). AIP Publishing. URL: https://doi.org/10.1063/5.0108989	Major work is done by S. Koley.
4.	Koley, S., & Panduranga, K. (2022, November). Oblique wave trapping by a perforated semi-circular breakwater placed near a rigid wall. In AIP Conference Proceedings (Vol. 2516, No. 1, p. 040002). AIP Publishing LLC. URL: https://doi.org/10.1063/5.0108521	Major work is done by S. Koley.
5.	Panduranga, K., & Koley, S. (2022, November). Wave trapping by a cylindrical dual porous floating breakwater near a rigid wall. In AIP Conference Proceedings (Vol. 2516, No. 1, p. 040001). AIP Publishing LLC. URL: https://doi.org/10.1063/5.0108519	Major work is done by S. Koley.

6.	Panduranga, K., & Koley, S. (2022, May). Attenuation of oblique waves by vertical slatted porous screens. In AIP Conference Proceedings (Vol. 2357, No. 1, p. 100008). AIP Publishing LLC. URL: https://doi.org/10.1063/5.0080588	Major work is done by S. Koley.
7.	Trivedi, K., & Koley, S. (2022, May). Irregular water wave interaction with oscillating water column wave energy converter devices placed over undulated seabed. In AIP Conference Proceedings (Vol. 2357, No. 1, p. 100007). AIP Publishing LLC. URL: https://doi.org/10.1063/5.0080595	Major work is done by S. Koley.
8.	Panduranga, K., & Koley, S. (2022, March). Wave interaction with inverse T-shaped porous floating breakwater. In AIP Conference Proceedings (Vol. 2435, No. 1, p. 020004). AIP Publishing LLC. URL: https://doi.org/10.1063/5.0083552	Major work is done by S. Koley.
9.	Trivedi, K., & Koley, S. (2021, September). Mathematical modelling of an OWC device mounted over the shoal bottom. In 2021 IEEE International Power and Renewable Energy Conference (IPRECON) (pp. 1-5). IEEE. URL: https://ieeexplore.ieee.org/document/9640918	Major work is done by S. Koley.
10.	Vipin, V., Trivedi, K., & Koley, S. (2021, November). Mathematical Modeling of a U-shaped OWC Device over the Slanted Sea Bed. In 2021 3rd International Conference on Control Systems, Mathematical Modeling, Automation and Energy Efficiency (SUMMA) (pp. 1022-1026). IEEE. URL: https://ieeexplore.ieee.org/document/9632151	Major work is done by S. Koley.
11.	Trivedi, K., & Koley, S. (2021, May). Hydrodynamic Performance of an OWC Device under the Action of Oblique Incident Waves. In 2021 Emerging Trends in Industry 4.0 (ETI 4.0) (pp. 1-5). IEEE. URL: https://ieeexplore.ieee.org/document/9619316	Major work is done by S. Koley.
12.	Koley, S., & Trivedi, K. (2020, November). Mathematical modeling of Oyster wave energy converter device. In AIP Conference Proceedings (Vol. 2277, No. 1, p. 130014). AIP Publishing LLC. URL: https://doi.org/10.1063/5.0025237	Major work is done by S. Koley.
13.	Koley, S., Panduranga, K., & Satpathi, D. K. (2020, November). Wave interaction with caisson breakwater placed on porous bottom foundation. In AIP Conference Proceedings (Vol. 2277, No. 1, p. 210009). AIP Publishing LLC. URL: https://doi.org/10.1063/5.0025238	Major work is done by S. Koley.

(d) Scopus-Indexed Book Chapters

No.	Paper Details (Published)	Remarks
1.	Valappil, V., & Koley, S. (2023). of a Piezoelectric Wave Energy Converter Device Integrated with a Vertical Breakwater over a Stepped Seabed. Miniaturized Electrochemical Devices: Advanced Concepts, Fabrication, and Applications, 43, CRC Press. URL: https://doi.org/10.1201/b23359	Major work is done by S. Koley.
2.	Trivedi, K., & Koley, S. Hydrodynamic Performance of a Submerged Piezoelectric Wave Energy Converter Device in Real Sea Conditions. In Miniaturized Electrochemical Devices (pp. 221-231). CRC Press. URL: https://doi.org/10.1201/b23359	Major work is done by S. Koley.
1.	Trivedi, K., & Koley, S. (2022). Performance of an L-shaped Duct Oscillating Water Column Wave Energy Converter Device Under Irregular Incident Waves. In Advances in Energy Technology: Select Proceedings of EMSME 2020 (pp. 719-728). Springer Singapore. URL: https://doi.org/10.1007/978-981-16-1476-7_64	Major work is done by S. Koley.
2.	Panduranga, K., & Koley, S. (2021, December). Gravity Waves Damping by a Porous Floating Breakwater Over an Undulated Seabed. In Conference on Fluid Mechanics and Fluid Power (pp. 201-205). Singapore: Springer Nature Singapore. URL: https://doi.org/10.1007/978-981-19-7055-9_34	Major work is done by S. Koley.
3.	Trivedi, K., & Koley, S. (2021, December). Hydroelastic Analysis of Viscoelastic Plate Over the Stepped Bottom. In Conference on Fluid Mechanics and Fluid Power (pp. 367-371). Singapore: Springer Nature Singapore. URL: https://doi.org/10.1007/978-981-19-7055-9_62	Major work is done by S. Koley.
4.	Vipin, V., Panduranga, K., & Koley, S. (2021, December). Scattering of Water Waves by a Quarter Circular Porous Breakwater Placed on a Porous Foundation. In Conference on Fluid Mechanics and Fluid Power (pp. 403-407). Singapore: Springer Nature Singapore. URL: https://doi.org/10.1007/978-981-19-7055-9_68	Major work is done by S. Koley.
5.	Panduranga, K., & Koley, S. (2021). Mitigation of wave loads on the floating porous structure by slotted screens. Boundary Elements and other Mesh Reduction Methods, WIT Press, XLIV, 131, 107. URL: https://www.witpress.com/elibrary/wit-transactions-on-engineering-sciences/131/38010	Major work is done by S. Koley.
6.	Panduranga, K., & Koley, S. (2021). Water Wave Interaction with Very Large Floating Structures. In Advances in Industrial Machines and Mechanisms: Select Proceedings of IPROMM 2020 (pp. 531-540). Springer Singapore. URL: https://doi.org/10.1007/978-981-16-1769-0_48	Major work is done by S. Koley.

7.	Trivedi, K., & Koley, S. (2021). Annual-Averaged Performance of Oscillating Water Column Wave Energy Converter Devices in Real Sea Conditions. In Advances in Industrial Machines and Mechanisms: Select Proceedings of IPROMM 2020 (pp. 541-550). Springer Singapore. URL: https://doi.org/10.1007/978-981-16-1769-0_49	Major work is done by S. Koley.
8.	Koley, S. (2020). Hypersingular Integral Equation Approach for Hydroelastic Analysis of a Submerged Elastic Plate. In Mathematical Modeling and Computational Tools: ICACM 2018, Kharagpur, India, November 23–25 (pp. 321-330). Springer Singapore. URL: https://doi.org/10.1007/978-981-15-3615-1_23	Major work is done by S. Koley.
9.	Koley, S., Panduranga, K., & Satpathi, D. K. (2020). Convergence of Eigenfunction Expansions for Membrane Coupled Gravity Waves. In Advances in Fluid Mechanics and Solid Mechanics: Proceedings of the 63rd Congress of ISTAM 2018 (pp. 101-108). Springer Singapore. URL: https://doi.org/10.1007/978-981-15-0772-4_9	Major work is done by S. Koley.
10.	Koley, S. (2020). Wave Trapping by Trapezoidal Porous Breakwater. In Advances in Fluid Mechanics and Solid Mechanics: Proceedings of the 63rd Congress of ISTAM 2018 (pp. 83-90). Springer Singapore. URL: https://doi.org/10.1007/978-981-15-0772-4_7	Major work is done by S. Koley.

(e) Other Publications/Reports

No.	Paper Details (Published)	Remarks
1.	Koley, S., & Vipin, V. Water Waves Scattering by A Submerged Thick Porous Breakwater Placed Over Undulated Bottom, PACE-2021 URL: https://www.pace.acapublishing.com/Web-book/pace2021.html	Major work is done by S. Koley.
2.	Panduranga, K., & Koley, S. Reduction of Wave Forces on a Rigid Breakwater by a Perforated Thin Barrier over Step Bottom, PACE-2021 URL: https://www.pace.acapublishing.com/Web-book/pace2021.html	Major work is done by S. Koley.
3.	Koley, S. Water Waves Trapping by Poroelastic Finite Plate over Undulated Seabed, PACE-2021 URL: https://www.pace.acapublishing.com/Web-book/pace2021.html	Single author paper.
4.	Trivedi, K., & Koley, S. Hydrodynamics Performance of the Floating Rectangular Shaped OWC Device in Random Waves Environment, PACE-2021 URL: https://www.pace.acapublishing.com/Web-book/pace2021.html	Major work is done by S. Koley.
5.	Panduranga, K., & Koley, S. Wave scattering by a dual cylindrical porous floating breakwater attached with a porous box, IWWWFB URL: http://www.iwwwfb.org/Workshops/36.htm	Major work is done by S. Koley.
6.	Koley, S., Behera, H., & Sahoo, T. (2014). Oblique wave trapping by a submerged porous structure near a wall, INCHOE-2014 URL: https://doi.org/10.13140/RG.2.1.4819.5442	Major work is done by S. Koley.
7.	Koley, S., & Sahoo, T. (2014). Scattering of oblique waves by permeable membrane barriers, ICTACEM-2014 URL:	Major work is done by S. Koley.
8.	Swami KC, Dash SK, & Koley, S. Scattering of Ocean Waves by Porous Membrane Type Wave Barriers Placed Over Undulated Seabed, J. Innovation Sciences and Sustainable Technologies, 3(4), 2023, 197-206. URL: https://jisst.com/article?item_id=2021001057	Major work is done by S. Koley.

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