CURRICULUM VITAE

Dr. Y.Rameshwar Professor



Department of Mathematics,

University College of Science, Osmania University, Hyderabad. E.mail : <u>rameshwar@osmania.ac.in</u>; Mobile No.: +91 8977241872

(1) Education :

2006 :Ph.D. (Applied Mathematics), Osmania University, Hyderabad. Title: Nonlinear Rayleigh-Bénard and Thermohaline convection.

1998 :M.Phil. (Applied Mathematics), University of Hyderabad, Hyderabad. Title: Magnetoconvection in Rotating Fluids.

1996 : M.Sc.(Applied Mathematics), Osmania University, Hyderabad.

(2) Professional Experience :

Teaching : 17 years (PG : 10, UG : 15)

- 25th May, 2007 to till date: Assistant Professor, Department of Mathematics, University College of Science, (Osmania University), Hyderabad-500007.
- 6thJanuary 2007 to 21st May 2007: Assistant Professor, Department of Mathematics, Kottagudem School of Mines, Kottagudem, Kakatiya University.
- June 2005 to Jan. 2007: Part time faculty, Department of Mathematics, University College of Science (Osmania University), Saifabad, Hyderabad-500004.

(3) Post Doc:

• 18th Dec. 2010 to 12th July 2011: Worked as a project scientist (visiting) on "Setting up of supercomputing facility at IIT Kanpur," Uttar Pradesh. (Research advisor, **Prof. M.K. Verma**).

(4) Foreign Visits and Research Experience:

• To deliver an invited talk in the conference "2019 Spring Progress in Mathematical and Computer Studies on Science and Engineering Problems" from March 15-17, 2019, Center for Advanced Study in Theoretical Sciences, National Taiwan University, Taiwan.

- 23rd Nov. 2018 to 2nd Dec. 2018: International research collaboration with **Prof. Tony Wen-Hann Sheu**, The Center for Advanced Study in Theoretical Sciences", National Taiwan University, Taiwan.
- 22nd Nov. 2017 to 22nd Dec. 2017 : Worked with **Prof. David Laroze**, (Instituto de Alta Investigacion, Universidad de Tarapaca, Casilla 7D, Arica, Chile), in the University College of Engineering (A), Osmania University, Hyderabad, during MHRD funded international workshop GIAN course.
- To deliver an invited talk in the conference "2nd Conference on Natural Dynamos", from 25th June to 1stJuly, 2017, Valtice, Czech Republic, Europe.
- 15th May 2017 to 14th July 2017: Visiting Scientist, Department of Astronomy, Physics of the Earth and Meteorology, Comenius University, Bratislava, Slovakia (Research Advisor **Prof. J. Brestensky**).
- 19th Oct. 2009to 16th Jan. 2010: Visiting scientist, Faculty of Mathematics, Physics and Informatics, Comenius university, Bratislava, Slovakia, in the frame of the National Scholarship Programme of the Slovak Republic, administrated by SAIA(Research Advisor **Prof. J. Brestensky**).
- 1st May 2006 to 10th June 2006: Visiting Scientist, Department of Astronomy, Physics of the Earth and Meteorology, Comenius University, Bratislava, Slovak Republic, Europe (Research Advisor Prof. J. Brestensky).

(5) EC Member :

• Executive Council (EC) member of Indian Society of Theoretical and Applied Mechanics (ISTAM) society for the academic years 2023-2024.

(6) Selection Committee member:

- Selection Committee member, Aurora's post graduate college, (Affiliated to Osmania University), for the academic years 2021-2023, Nampally, Hyderabad.
- Selection Committee member, Mytreyi Degree College for Women, for the academic years 2022-2024, Mehdipatnam, Hyderabad-500028.

(7) Research Collaboration:

• Prof. M.K. Verma, Turbulence group, Department of Physics, IIT Kanpur, during 21-24th July 2010.

(8) Project:

"Nonlinear convection in Porous media" Ref No. MRP-2499/08 UGC-SERO, duration: Mar. 2008- Mar. 2011.

(9) Publications: In journals (SCI)

- 1. **Y.Rameshwar**, G. Srinivas, A. Krishna Rao, U.S. Mahabaleshwar, D. Laroze, Nonlinear Analysis of Cross Rolls of Electrically Conducting Fluid under an Applied Magnetic Field with Rotation, Processes, **11**, (2023), 1-30.
- 2. Y. Rameshwar, G. Srinivas, and D. Laroze, Finite Amplitude Oscillatory Convection of a Binary Mixture Kept in a Porous Medium, Processes, 11,(2023), 1-33.
- 3. M.A. Rawoof, Sayeed, **Y. Rameshwar**, "Finite Amplitude Cellular Thermohaline Convection," (2022), J. Heat Transfer, **144**, 112602(1-17) (Impact Factor: 2.02)
- 4. **Y. Rameshwar**, G. Srinivas, D. Laroze, M. A. RawoofSayeed, H. P. Rani, "Convective Instabilities in Binary Mixture ³He - ⁴He in Porous Media," Chinese Journal of Physics (2022), **77**, 773-802. (Impact Factor:5.0)
- Rani H.P., Narayana V., Rameshwar Y., Starchenko S.V. (2022) "Numerical Flow Analysis in Γ Shaped Enclosure: Energy Streamlines and Field Synergy". In: Kosterov A., Bobrov N., Gordeev E., Kulakov E., Lyskova E., Mironova I. (eds) Problems of Geocosmos–2020. Springer Proceedings in Earth and Environmental Sciences. Springer, Cham. 235-249(Scopous, ISSN: 2524-3438)
- 6. Hari Ponnamma Rani, Karagoni Naresh, **Yadagiri Rameshwar** and Sergey V. Starchenko (2022), "Heat Transfer Analysis of Tangentially rotating fluid flow past a semi-infinite vertical cylinder kept in uniform horizontal magnetic field using nonlinear regression and back propagation neural networks", Problems of Geocosmos–2020. Springer Proceedings in Earth and Environmental Sciences. Springer. (Scopous, ISBN:978-3-030-91467-7), 211-234.
- Hari Ponnamma Rani, Vekamulla Narayana, Yadagiri Rameshwar, Sergey VladimirovichStarchenko (2020) "Aspect Ratio Effects on Bottom Heated 2D Cavity using Energy Streamlines and Field Synergy Principle", Latin American Applied Research / Heat and Mass Transfer, An International Journal, Vol. 50(1), pp.41-46. (SCIE) (Impact Factor:0.184)
- Hari Ponnamma Rani, Yadagiri Rameshwar and Jozef Brestenský (2019), "Topology of Rayleigh–Bénard convection and magnetoconvection in plane layer", *Geophysical & Astrophysical Fluid Dynamics*, 113, 208-221. (Impact Factor: 1.583)
- 9. H.P. Rani, V.Narayana, **Y. Rameshwar** (2019) "Analysis of Field Synergy in Bottom Heat Lid Driven Cubical Cavity", E3S Web of Conferences, ICCHMT- 2019, Vol. 128, pp.07007(1-7). (Scopus, eISSN: 2267-1242)

- 10.H.P. Rani, V.Naresh, Y. Rameshwar (2019) "Field Synergy Principle for Natural Convective Rotating Fluid Flow past a Vertical Cylinder", E3S Web of Conferences, ICCHMT- 2019, Vol. 128, pp.01021. (Scopus,eISSN:2267-1242)
- 11.Hari Ponnamma Rani, Vekamulla Narayana, Yadagiri Rameshwar (2019) "Analysis of Aspect Ratio Effects of Left Heated 2D Cavity Using Energy Streamlines and Field Synergy Principle", Mathematical Modelling of Engineering Problems, Vol.6(3), pp.437-448. (Scopus) (Impact Factor : 1.72)
- 12.H.P Rani, V. Narayana, **Y. Rameshwar** (2019) "Mixed Convective flow in a Bottom Heated Lid Driven Cubical Cavity: Energy streamlines and Field synergy", Heat transfer-Asian Research, Vol.48(6),pp.1-15. (Impact Factor : 2.24)
- 13.H.P Rani, V. Narayana, **Y. Rameshwar** (2019) "Bottom Heated Mixed Convective Flow in Lid-driven cavity flows", Numerical Heat Transfer and Fluid Flow, Lecture Notes in Mechanical Engineering. pp.597-602. (Impact Factor : 0.554)
- 14. **Y. Rameshwar**, V. Anuradha, G. Srinivas, L. M. Pérez, D. Laroze, and H. Pleiner, (2018), "Nonlinear convection of binary liquids in a porous medium", *Chaos*28, 075512(1-9). (Impact Factor: 2.643)
- 15.H.P. Rani, V. Narayana, Y. Rameshwar (2018) "Analysis of Vortical structures in a differentially heated lid driven cubical cavity", *International Journal of Heat and Technology*, 36(2), 548-556.
- 16.Y. Rameshwar, M.A. Rawoof Sayeed, H.P. Rani, D. Laroze, (2017), "Finite amplitude cellular convection under the influence of a vertical magnetic field", *International Journal of Heat and Mass Transfer*, **114**, 559–577. (Impact Factor 5.53)
- 17.H.P. Rani, G Janardhana Reddy, C.N. Kim, Y. Rameshwar (2015), "Transient couple stress fluid past a vertical cylinder with Bejan's heat and mass flow visualization for steady-state", *Journal of Heat Transfer*, 137(3), 032501. (Impact Factor 2.06)
- 18. **Y. Rameshwar**, M.A. Rawoof Sayeed, H.P. Rani, D. Laroze(2013), "Mean flow effects in Magnetoconvection" *International Journal of Heat and Mass Transfer*, **65**, 855–862.(Impact Factor 3.41)
- 19.**Y. Rameshwar**, Shakira Sultana, S. G. Tagare(2013), "Küppers-Lortz instability in rotating Rayleigh-Bénard convection in a porous medium" *Mechanica*,**48(10)**, 2401-2414. (Impact Factor 2.258)
- 20.**Y. Rameshwar**, Hari Singh Naik and Ishak Hashim(2013), "Rotating Rayleigh-Benard Convection with variable diffusive coefficients", *International Journal of Engineering Applications*, **1**(2),113-126. (Scopus)

- 21.D. Laroze, J. Martinez Mardones, L.M. Perz and Y. Rameshwar(2009), "Amplitude equation for stationary convection in a rotating binary ferrofluid" *International Journal of Bifurcation and Chaos*, 19, 2755-2764. (Impact Factor 0.755)
- 22.S.G. Tagare, Y. Rameshwar and Shakira Sultana (2008), "Kuppers-Lortz instability in rotating thermohaline convection with finite Prandtl Number", *Journal of Physical Society of Japan*, 77, 104401-104407. (Impact Factor 2.4)
- 23.S.G. Tagare, A. BenerjiBabu and Y. Rameshwar (2008), "Rayleigh-Bénard convection in rotating fluids" *International Journal of Heat and Mass Transfer*, 51, 1168-1178. (Impact Factor 2.736)
- 24.S.W. Raja, M.D. Rahim and M.V. Ramana Murthy and **Y.Rameshwar** (2007), "Blood Flow through a diverging channel" *International Journal of Applied Mathematical Analysis and Applications*, **2**, 243-256. (ISSN: 0973-3868).
- 25.S.G. Tagare, M.V. Ramana Murthy and Y. Rameshwar (2006), "Nonlinearthermohaline convection in rotating fluids" *International Journal of Heat and Mass Transfer*, 50, 3122-3140. (Impact Factor 2.469)
- 26.S.G. Tagare, Y. Rameshwar, A. Benerji Babu and J. Brestensky (2006), "Rotating compositional and thermal convection in Earth's outer core", *Contributions to Geophys. And Geod.*36, 87-113. (ISSN (printed): 1335-2806. ISSN (electronic): 1338-0540)
- 27.S.G. Tagare and Y. Rameshwar (2003), "Magnetoconvection in rotating stars", Astrophys and Space Science, 284, 983-999. (Impact factor 1.686)
- 28.S.G. Tagare, **Y. Rameshwar**, J. Brestensky and S. Sevesik(2001), "Thermohalinemagnetoconvection in Earths outer core" *Acta Astron. EtGeophys. Univ. ComenianaeXXIII*, 49-62.

(10) Conference Proceedings:

- H. P. Rani, N. Krishnendu, Y. Rameshwar, J. Brestenský, Weakly Nonlinear Analysis of Rotating Magnetoconvection with Anisotropic Diffusivities in Earth's core near the Onset of Oscillatory Instability, In Proceedings of the 21stConference of Czech and Slovak Physicists, Bratislava (2023).
- Haseena Begum, V. Anuradha, Rawoof Sayeed, and Y. Rameshwar, Nonlinear Rotating Double-Diffusive Oscillatory Convection, , 68thISTAM, NITW, Warangal (2023).
- A. Krishna Rao, G. Srinivas, Y. Rameshwar, Natural Convection in Dielectric Fluids with stress-free boundary conditions, 67th ISTAM-2022, IIT Mandi.
- 4. **Yadagiri Rameshwar**, V. Anuradha, HariPonnammaRani, S.V. Starchenko, (24-27 March 2021) "Nonlinear convection in rotating ferromagnetic fluids"13th International Conference and School «Problems of Geocosmos» held via Zoom, Russia.
- 5. **Yadagiri Rameshwar**, Gudukuntla Srinivas, Hari Ponnamma Rani, Jozef Brestensky, and Enrico Filippi, (4-8 May, 2020) "Convection of electrically conducting fluid in a rotating magnetic system: cross rolls", EGU General Assembly.
- H. P. Rani, Y. Rameshwar, S. V. Starchenko, (May 15-16, 2019), Magnetoconvection in plane layer. // Collection of extended abstracts. All-Russian open scientific conference «Pushkov readings: magnetism on Earth and in Space», Moscow, Troitsk, IZMIRAN. Edited by V.G. Petrov. P.131-134.DOI: 10.31361/pushkov2019.031.
- Starchenko S.V., Rani H.P., Rameshwar Y.(May 15-16, 2019), "Planetary nagnetoconvection scaling and turbulence". // Collection of extended abstracts. All-Russian open scientific conference, «Pushkov readings: magnetism on Earth and in Space», Moscow, Troitsk, IZMIRAN. Edited by V.G. Petrov. P. 163-166. 2019. DOI: 10.31361/pushkov2019.039.
- 8. H.P. Rani, V. Narayana and **Y.Rameshwar** (3-6 September 2019), "Analysis of field synergy in bottom heated lid driven cubical cavity", XII International Conference on Computational Heat, Mass and Momentum Transfer, Rome, Italy.
- 9. H.P. Rani, KoragoniNaresh, **Y. Rameshwar** (3-6 September 2019), "Field synergy principle for natural convective rotating fluid flow past a vertical cylinder", XII International Conference on Computational Heat, Mass and Momentum Transfer, Rome, Italy.

- Y.Rameshwar, H.P. Rani, JozefBrestensky, "Plane Layer Dynamos", 2nd Conference on Natural Dynamos Natural Dynamos during 25th June to 1st July 2017 at Valtice, Czech Republic.
- 11. H.P. Rani, **Y.Rameshwar**, Jozef Brestensky, "Topology of Plane Layer Dynamos", 2nd Conference on Natural Dynamos Natural Dynamos during 25th June to 1st July 2017 at Valtice, Czech Republic.
- 12. V. P. Anurada, **Y. Rameshwar** and H. P. Rani (Dec. 16-19, 2015), "Finite amplitude convection in a binary fluid in a porous medium", Proceedings of 60th Congress of ISTAM, held at MNIT, Jaipur-302017, Rajasthan, India,. Paper No. 60-istam-fm-fp-220.
- 13. V.P.Anurada, Y.Rameshwar, H.P.Rani and D.Laroze, (March 20-21, 2015), "Onset of oscillatory convection in a binary fluid in a porous medium", International Conference on New Frontiers in Chemical, Energy and Environmental Engineering, organised by Department of Chemical Engineering, National Institute of Technology, Warangal. pp no.111-112.
- 14. H.P. Rani, B.Vasu and **Y. Rameshwar**, (Feb 28 Mar 3, 2015), "Transient Bio-convective flow of a nanofluid over a vertical cylinder embedded in a non-Darcy porous medium", International Conference on Mathematical and Computational Biology, organized by IIT Kanpur. pp no.31.
- V.P. Anurada, Y. Rameshwar and H. P. Rani, D. Laroze (Dec. 17-20, 2014), "Natural convection in a binary fluid in a porous medium", Paper No. 59-istam-fm-fp-226, Proceedings of 59th Congress of ISTAM. Held at Alliance University, Anekal, Bangalore 562106, Karnataka.
- 16. V.P.Anurada, **Y.Rameshwar** and H.P.Rani, (25th-26th, 2014) "Convective instability of a binary mixture in a porous medium", National seminar on New trends in Analysis, organized by Department of Mathematics, Nehru Arts and Science College, Kasaragod District.
- Shakira Sultana, Y.Rameshwar and H.P.Rani, (Dec. 17-20, 2014), "Effect of rotating magnetoconvection in porous medium in the presence of horizontal magnetic field", Paper No. 59-istam-fm-fp-259, Proceedings of 59th Congress of ISTAM. Held at Alliance University, Anekal, Bangalore 562106, Karnataka.

(11) Reviewer of research articles :13 (Physics of Fluids).

(12) Ph.D.Guidance:

- **D. Praveen Kumar (UGC-CSIR, JRF)**, Topic: Numerical investigation of fluid flow in a cavity under obstructions (2018-Ongoing).
- **A. Krishna Rao**, Topic: Finite Amplitude Rayleigh-Benard Convection and its Applications (About to conduct Final Viva).
- G. Srinivas, Topic: Finite amplitude cellular Convection (Awarded, 2019).
- **P.Anuradha**, Topic: Nonlinear Convection in Binary Ferromagnetic Fluids (Awarded, 2017).
- M. A. Rawoof Sayeed, Topic: Mean Flow Effects and Heatline Visualization of Rayleigh-Benard and Thermohaline Convection (Awarded, 2017)
- Harisingh Naik, Topic: Rayleigh-Benard and Thermohaline convection with variable viscosity (Awarded, 2013).

(13) Conference/ Workshop/ GIAN Course Organized:

- A motivation lecture by David Laroze, Director, Instituto de Alta Investigacian, Universidad de Tarapaca, Chile on 5th Dec. 2023, Department of Mathematics, UCS, OU.
- **FDP** on "High accuracy, High performance computing of fluid flows", from 30 Dec. 2019-03 Jan. 2020, jointly organized by the Departments of Mathematics and Mechanical Engineering, UCE,OU, sponsored by TEQIP-III.
- A two day conference on "Contemporary approaches in scientific computing," from 29-30, Aug. 2017, in honour of Prof.M.V. Ramana Murthy's superannuation, Department of Mathematics, UCS,OU.
- MHRD funded One-month GIAN course was jointly organized by Departments of Mathematics and Mechanical Engineering, UCE,OU, on "Nonlinear Dynamics of Classical Magnetic Systems" from 22 Nov. 2017 to 22 Dec. 2017.
- Co-convener to the international conference on "62nd Congress of Indian Society of Theoretical and Applied Mechanics (**ISTAM**)" conducted during 15-18, Dec. 2017.
- Three day workshop on "Applications of Numerical Methods in Science and Engineering" by Departments of Mechanical Engineering and Mathematics, 21-23, Oct., 2016, sponsored by TEQIP-II.

• Two Weeks Certificate cum Instructional symposium on "Implementation of Finite Element Methods and Relevance of Mathematics to Real World Problems" organized by the Department of Mathematics, Osmania University, 1st - 14th August 2014.

(14) Participation in Orientation Program/Training Program/STTPs/Workshop

- AttendedGIAN course on "Convective Instabilities and Natural Dynamos", NITW, January 2023.
- Attending Two-Weeks GIAN course on "Magnetohydrodynamics in the light of Astrophysical Dynamos, Analytic Asymptotic and Numeric Applications," 19-29, September 2022, NITW.
- Attended 10 days GIAN course on "Hydrodynamic Stability and Dynamo Theory", 9-20, Dec., 2016, at National Institute of Technology, Warangal funded by MHRD, India.
- Attended 10 days GIAN course on "Designing and developing flipped class room, e-learning instruction for engineering and science education" from 9-18,2016 at NIT Warangal.
- Attended 88th Orientation program at University of Hyderabad from 19th June to 16th July-2014.
- Attended two week workshop on "Fluid Mechanics" organized by IIT-Kharagpur held at NIT Warangal, from 20to 30 May 2014.
- QIP short term course on "Modern Control Perspectives in Solid and Fluid Mechanics", from 18-22, Jan 2014, organized by Department of Applied Mechanics and Mathematics, IIT Madras.
- Faculty development program in entrepreneurship, during 4 -11, Jan 2014 organised by The Entrepreneurship Development Cell, Osmania University, Hyderabad.
- National workshop on "Advanced computational applications using ANSYS Fluent", 7th Jan 2011, Department of Mathematics, National Institute of Technology, Warangal.
- Short term training program (STTP) on "Advanced Computational Techniques", Jan. 27-31, 2009, Department of Mathematics, National Institute of Technology, Warangal.
- Orientation program from 12-22, June 2007, Organized by Osmania University, Hyderabad.

- Training program on "Mathematical modeling on ground water pollution" from 1st May to 31st May-2005, Bangalore University, Bangalore.
- (15) Chaired and co-chaired in the 68th ISTAM-2023, 7-9, Dec. 2023.

(16) Invited Lecture/Presentations:

- Delivered guest lectures in GIAN course on "Convective Instabilities and Natural Dynamos", NITW, January 2023.
- Delivered a lectureon "Convection in Porous media in the presence of vertical magnetic field", XXX congress of APTSMS and International conference on Mathematics and its relevance to science and Engineering, OU (2022).
- Delivered a lecture on "Fourier Series and its Applications", UGC-HRDC, Osmania University (2022).
- Delivered a talk on "Nonlinear convection in rotating Ferromagnetic fluid", 13th International Conference and School «Problems of Geocosmos» held via Zoom on 24-27,(2021), Russia.
- Invited talk on "Analysis of fluid problems and viscous flows" for STP-Finite Element Analysis and Design of Hydraulic Structures using ANSYS to the Engineers of irrigation and water recourses development division, Engineering Staff College of India, during 2-4, September, (2019).
- Plenary talk on "Introduction to perturbation methods" in the national conference on Recent trends in Applied Mathematics at PG and Research Center, Department of Mathematics, Theivanai Ammal College for Women Autonomous, Villupuram, Tamil Nadu, during August 30, 2019.
- Invited talk in the conference "2019 Spring Progress in Mathematical and Computer Studies on Science and Engineering Problems" during March 15-17, 2019 on "Nonlinear Thermohaline convection." CASTS, National Taiwan University, Taiwan.
- Delivered a talk on "Finite amplitude cellular convection of binary mixture in a porous media near the onset of stationary convection"Nationalconference onMathematical Sciences and Applications, Osmania University, 30-31, June, 2018.
- Delivered talks on "Finite Element Methods and its applications", MHRD funded One-month GIAN course was jointly organized by Departments of Mathematics and Mechanical Engineering, UCE,OU, on "Nonlinear Dynamics of Classical Magnetic Systems" from 22 Nov. 2017 to 22 Dec. 2017.

- Delivered an invited talk on "Topology of Plane Layer Dynamos", 2nd Conference on Natural Dynamos, Valtice, Czech Republic, Europe, 25th June to 1st July, 2017.
- Delivered a talk on "Convection in Busse Annulus", 10 days GIAN course on "Hydrodynamic Stability and Dynamo Theory", 9-20, Dec., 2016, at National Institute of Technology, Warangal funded by MHRD, India.
- Delivered a talk on "Role of ICT in Rural Girls Education" Two day national conference on "Women in Higher Education: Perspective and Challenges in Digital Era", NIT Warangal, May 30-31, 2016.
- Delivered a talk in a workshop on ICT on the topic "An introduction to computational fluid dynamics" UGC-HRDC, Osmania University, 21st March 2016.

(17) Administrative Responsibilities:

- •2023till date, Seminar Library in-charge, Department of Mathematics, UCS,OU.
- •2014 to till date, **BoS** member, Department of Mathematics, UCE,OU(A).
- Jan. 2018 Aug. 2020: **Head** of the Department of Mathematics, University College of Engineering, Osmaina University, Hyderabad.
- Dec 2012 Dec 2013: **Head** of the Department of Mathematics, University College of Science (Osmaina University), Saifabad, Hyderabad.
- Aug 2011 Dec 2013: Member of **Board of studies** in Mathematics under Faculty of Science, Osmania University, Hyderabad.
- Dec 2009 Dec 2013: Hostel coordination committee member, University college of science (Osmaina University), Saifabad, Hyderabad.

(18) Research Interests:

Nonlinear Dynamical systems, Hydrodynamic and Hydromagnetic Stability, Ferrohydrodynamics Convection.

(19) Memberships in Scientific Bodies :

- Member of "Indian Society of Theoretical and Applied Mechanics", Bharat.
- Member of "European Geophysical Union", Munich, Germany.
- Member of "International Association of Engineers", Hong Kong, China.