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Dr. Chakradhara Rao Meesala
(Ph.D. IITKGP)

Qualifications:

Ph.D. from IIT Kharagpur in Structural Engineering, 2010
M.Tech. from NIT Surathkal in Structural Engineering with 84%, 1999
B.Tech. from Nagarjuna University in Civil Engineering with 74%, 1997
DCE from MVGR Govt. Polytechnic, AP in Civil Engineering with 83.5%, 1993
SSC from Govt. High School, AP with 70%, 1988

Areas of Interest: Sustainable Construction Materials, Static and Impact Testing of Concrete, Microstructural Analysis of Concrete

Experience

- *Professor in the Dept. of Civil Engg., SoS Engg & Tech., GGV from May 2015 to Till Date*
- *Associate Professor in the Dept. of Civil Engg., SoS Engg & Tech., GGV from May 2012 to April 2015*
- *Professor in the Dept. of Civil Engg., GIT, GITAM University, Visakhapatnam since March 2011 to April 2012*
- *Professor & Head, Civil Engg. Dept. Bapatla Engineering College, Bapatla, Andhra Pradesh during September 2010 to March 2011*
- *Project Associate, Dept. of Civil Engg., IIT Kharagpur from January 2007 to December 2009*
- *Assistant Professor from March 2005 to January 2007 and Lecturer during July 1999 to March 2005 in the Dept. of Civil Engg. at Bapatla Engineering College, Bapatla, Andhra Pradesh*

Research Projects :

- 1) Title: Normal and medium strength concrete with 100% recycled coarse aggregate
Funding Agency: CSIR, New Delhi, India
Amount: 13.75 Lakhs
Sanctioned in 2013 (3 years)
PI: Dr.M.Chakradhara Rao
- 2) Title: Size-effect and characterization of fracture parameters for crack propagation in concrete
Funding Agency: UGC, New Delhi, India
Amount: 13.86 Lakhs
Sanctioned in 2013 (4 years)
PI: Prof. Shailendra Kumar and Co-PI: Mr.R.K.Choubey & **Dr.M.Chakradhara Rao.**

International Collaboration/Consultancy:

Internal Consultancy works: Structural Design / Vetting/proof checking for various Building Projects of Guru Ghasidas Vishwavidyalaya, Bilaspur

Total Projects Cost: 7174 Lakhs

External Consultancy Works: Structural Design / Vetting for various Building/Bridge/Sump well Projects for private/Govt organizations such as Nagar Palik Nigam, Bilaspur; CPWD; Sandeep Singh Bhatia, TEC, Raipur, etc.

Total Cost of Projects: 2086.10 Lakhs

Research Publications

National & International Journals: 19

National & International Conferences: 15

International/National Journal

- Nikhil Kumar Verma, **Chakradhara Rao M.**, Shailendra Kumar, (2023). Developing an ANN prediction model for compressive strength of fly ash-based geopolymer concrete with experimental investigation. *Neural Computing and Applications (Springer Nature)*, <https://doi.org/10.1007/s00521-023-08237-1>. (SCIE, IF: 5.606).
- Gupta Tanuja, **Chakradhara Rao Meesala**, (2022) Critical review on various aspects of geopolymer concrete. *Indian Concrete Journal (ICJ)*, 96 (2), 14 - 34 (Scopus, Impact Score: 1.6)
- Nikhil Kumar Verma, **Chakradhara Rao M.**, Shailendra Kumar, (2022). Effect of Curing Regime on Compressive Strength of Geopolymer Concrete. *Earth and Environmental science, IOP Publishing*, 982, 012031.
- Nikhil Kumar Verma, **Chakradhara Rao M.**, Shailendra Kumar, (2022). Effect of molarity of NaOH and alkalinity ratio on compressive strength of geo-polymer concrete. *Journal Materials Today (Elsevier, Scopus)*: Proceedings. In press.
- Gupta Tanuja, **Chakradhara Rao Meesala**, (2021) Prediction of compressive strength of geopolymer concrete using machine learning techniques. *Structural Concrete, (fib Wiley)*, pp. 1 – 16, <https://doi.org/10.1002/suco.202100354> (SCI, IF 3.131, Citations: 09)
- **Chakradhara R Meesala**, Nikhil K Verma, Shailendra Kumar (2020) Critical review on fly-ash based geopolymer concrete. *Structural Concrete, (fib Wiley)*, pp. 1 – 16, doi.org/10.1002/suco.201900326 (SCI, IF 3.131, Citations: 56)
- **Chakradhara R Meesala**, (2020) Influence of Brick Dust, Stone Dust and Recycled Fine Aggregate on Properties of Natural and Recycled Aggregate Concrete. *Structural Concrete, (fib Wiley)*, pp. 1 – 16, doi.org/10.1002/suco.202000103, (SCI, IF 3.131, Citations: 09)
- **Chakradhara R Meesala** (2019). Influence of different types of fibre on the properties of recycled aggregate concrete. *Structural Concrete, (fib Wiley)*, pp. 1 – 14, DOI: 10.1002/suco.201900052. (SCI, IF 3.131, Citations: 20)
- **Chakradhara Rao M.** (2018). Properties of recycled aggregate and recycled aggregate concrete: Effect of parent concrete. *Asian Journal of Civil Engineering (Springer)* 19 (1): 103 – 110 (Scopus, Impact Score: 1.6, Citations 25)
- Choubey R.K., Kumar S. and Rao M.C. (2017). Numerical evaluation of simplified extreme peak load method for determining the double - K fracture parameters of concrete. *International Journal of Engineering and Technology* 9 (3): 2097 – 2110.
- **Chakradhara Rao, M.**, Bhattacharyya, S.K., Barai, S.V. (2017). Influence of different demolished old structures concrete as aggregate on properties of concrete. *Indian Concrete Journal (ICJ)* 91 (1): 68 – 85. ISSN: 00194565, January, (Scopus, IF: 0.243, Citations 04)
- Choubey R.K., Kumar S. and **Rao M.C.** (2016). Modeling of fracture parameters for crack propagation in recycled aggregate concrete. *Construction and Building Materials (Elsevier)* 106: 168-178. IF: 3.169; ISSN: 0950-0618. SCI March 2016, (SCI, IF: 6.14, Citations: 31)
- Choubey R.K., Kumar S. and **Rao M.C.** (2014). Effect of shear-span/depth ratio on cohesive crack and double-K fracture parameters. *Advances in Concrete Construction (Technopress)* 2 (3): 229-247. ESCI, SCOPUS, ISSN:2287-5301, Online (2287-531X) (ESCI, IF: 3.214, Citations: 08)

- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Interfacial Transition Zone, Strength and Chloride Penetration of Recycled Aggregate Concrete. *Indian Concrete Journal (ICJ)*, 89 (11), 54 – 65, November 2015. (Scopus, IF: 0.243, Citations: 02)
- **Chakradhara Rao, M** and Arun, K. Influence of Superplasticiser on Properties of Recycled Aggregate Concrete. *Asian Journal of Civil Engineering (BHRC)*, 16 (7), 1001 – 1023, May 2015. ISSN: 1563-0854 (Print), 2522-011X (online), Springer, (Scopus, Impact Score: 1.6, Citations 02)
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Properties of Recycled Aggregate Concrete using Non-destructive Testing. *International Journal of Structural Engineering and World Congress*, 2012.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Influence of Field Recycled Coarse Aggregate on Properties of Concrete. *Journal of Materials and Structures, RILEM (Springer)*, 44 (1), 205 – 220, 2011. ISSN: 1359-5997 January 2011 (SCI, IF: 4.419, Citations: 386)
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Behaviour of Recycled Aggregate Concrete under Low velocity Impact. *Journal of Construction and Building Materials (Elsevier)*, 25 (1), 69 – 80, 2011. January 2011, (SCI, IF: 6.14, Citations: 159)
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Recycled Coarse Aggregate and its Use in Concrete. *Indian Concrete Institute Journal*, 11(4), 2011.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Microstructure of Recycled Aggregate Concrete. *Journal of Structural Engineering (SERC)*, 38 (1), 75 – 83, 2011. ISSN: 0970-0137 (Scopus, IF: 0.13, Citations: 08)

International/National Conferences

- Tanuja Gupta and **Chakradhara Rao M.,** “Effect of untreated recycled aggregate on properties of GPC” at International conference on recent advancement in civil engineering (RACE-2k22) organized by Department of Civil engineering, Oriental Institute of Science and Technology, 14 – 15 October 2022.
- **Chakradhara Rao, M.,** Ramanarayan. Effect of the quality of recycled aggregate on compressive strength of recycled aggregate concrete. **Proceedings of 2nd** International Seminar On “Utilization of Non-Conventional Energy Sources for Sustainable Development of Rural Areas ISNCEsr’16 17th & 18th March 2016.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Compressive Strength and Durability of Recycled Aggregate Concrete. International conference on Sustainability Challenges and Advances in Concrete Technology, 188-196, 2 - 4th May 2012, PSG College of Technology, Coimbatore, Tamil Nadu, India
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Recycled aggregate concrete: A sustainable built environment. **International conference on Sustainable built environment – The state of the art.** 12-14th December 2010, Kandy, Srilanka.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Microstructure of Recycled aggregate concrete. Proceedings of the Seventh Structural Engineering Convention, SEC-2010, Annamalai Univeristy, Tamilnadu, 8-10th December 2010.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Recycled aggregate concrete: A sustainable built environment. International conference on Sustainable built environment – The state of the art. 12-14th December 2010, Kandy, Srilanka.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Influence of Recycled Aggregates on Mechanical Properties of Concrete. The 5th Civil Engineering Conference in the Asian Region and Australasian Structural Engineering Conference 2010. Sydney, Australia, 8 – 12th August 2010.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Recycled Aggregates: A sustainable Construction Material. The National Conference on “Sustainable Development of Urban Infrastructure” VNIT Nagpur, 18 – 19th June 2010.

- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Towards Waste to Wealth: Construction and Demolition (C&D) Waste as Aggregate in Concrete. International Seminar on “Waste to Wealth” “Green Building Materials and Construction Technologies using Agricultural and Industrial Waste”. New Delhi, 12-13th November 2009
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Characterisation of Recycled Aggregate Concrete Prepared with Recycled Coarse Aggregate obtained from Two Different Sources. International Conference on Advances in Concrete, Structural and Geotechnical Engineering, Pilani, 25-27th October 2009.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Influence of Different Sources of Recycled Coarse Aggregate on Properties of Concrete. Proceedings of First International Conference on Recycling and Reuse of Materials (ICRM 2009), Kottayam, Kerala, 17-19th July 2009.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Characterisation of Recycled Aggregate Concrete. Proceedings of the Sixth Structural Engineering Convention, SEC-2008, Chennai, 18-20th December 2008.
- **Chakradhara Rao, M.,** Bhattacharyya,S.K., Barai,S.V. Preliminary Test Results of RCA based Concrete. Proceedings of International Conference on XXXVI World Congress on housing Sector, Kolkata, 3-7th November 2008.

Book Published:

Title: Systematic Approach of Characterisation and Behaviour of Recycled Aggregate Concrete

Publishers: **Springer**

ISBN: **978-981-10-6686-3**

Year: **2019**

Authors: **M Chakradhara Rao, S.K. Bhattacharyya, Sudhirkumar V Barai**

- **Research Supervision**

M.Tech: 01

Ph.D.: 01 completed, (01) submitted, (01) ongoing

Administrative Responsibilities at GGV

- Administrative Warden, SVBH since January 2022 to January 2023
- Hold the position of Head, Civil Engineering Department w.e.f. 28-06-2017 to 28-12-2021
- Administrative Warden, New Boy’s Hostel A (19-09-2018 to April 2019)
- Member, Ordinance committee of B.Tech. and M.Tech. ordinances, 2022
- Member, IQAC since 2021 to till date
- Coordinator for Criteria IV of NAAC and AQAR 2018 to 2021.
- Convener, VET/VRET OMR Evaluations and Results Preparation for 2013-14 & 2014-15
- Member, Committee for Ordinance for Transparency in Examinations (01-11-2018)
- Coordinator, AICTE of School of Engineering & Technology from the academic year 2021-22 till date
- Member, Committee for Rules and Regulations for study leave/leave under QIP for faculty in SoS, Engg.&Tech. (12-10-2018)
- Member, Building Committee during 2017 to 2021
- Convener, MOOCs Lab Committee w.e.f.21-12-2018 to 21-10-2021
- Member, VRET-2018-19 Ph.D. admission brochure committee w.e.f.07-08-2.18
- Worked as a member of Advisory & Executive Committee for Unified Consultancy Services SoS, Engg. & Tech. w.e.f. 03-11 -2012 to 28-12-2021
- Working as a Member of CEC-CMC since 2012 to till date
- Worked as a Member of Academic Council w.e.f. 15-9-2012 to 28-12-2021
- Worked as a member of Standing Committee of the Academic Council between 2015 to 2018
- Working as the Nodal Officer of the GIAN since 08-01-2016 to till date
- Worked as Nodal officer MOOCs of the GGV from 08-01-2016 to 21-10-2021

- Worked as Chairman, BoS, Civil Engineering during 2017 and 2021
- Worked as Member, BoS, Civil Engineering, during 2012-17
- Worked as UE (In-charge) during 2012-13
- Coordinator, AICTE related works during 2015-2017
- Worked as DRC Member for Mechanical, IPE, CSE during 2013-2016
- Worked as a DRC member Civil Engg, during 2-13-2016
- Chairman, DRC, Civil Engineering since June 2017 to 28-12-2021
- Faculty Coordinator, Techfest Equilibrio 2015

Administrative Responsibilities before joining at GGV

- Head, Civil Engineering Department, Bapatla Engineering College since 03-09-2010 to 12-03-2011
- Chief Centre Superintendent, B.Tech. (Exams IV Sem) at GITAM University during 2011-12

Additional Information:

Lecture Notes

1. “Recycled Aggregate Concrete” A QIP Short term course on “**Pavement, Materials, Design and Evaluation**” Organized by **Civil Engineering Department, IIT Kharagpur, 2009.**
2. “Recycling of Construction and demolition Waste” AICTE Sponsored Staff Development Program organized by **GMRIT, RAJAM, 30th May to 11th June 2011.**

Workshops/Refresher Courses Conducted/Organized

- ***One week ATAL FDP*** on “Sustainable construction Materials and Technologies” conducted during 21-02-2022 to 25-02-2022, sponsored by AICTE, New Delhi.
- A five day Short term course on “Repair, Rehabilitation and Strengthening of Concrete Structures using high performance cement based materials” under ***GIAN (MHRD) during 13-02-2018 to 17-02-2018.***
- A three week refresher course on “Advances in Engineering and Technology” during 5th June 2017 to 24th June 2017, Sponsored by ***UGC/MHRD, at UGC-HRDC, GGV, Bilaspur***
- A one day workshop on awareness programme of NPTEL for students of IT

Professional Memberships

- Life member of The Indian Concrete Institute
- Life member of ISTE

Reviewer

- Elsevier, Springer, Wiley, Indian Concrete Journal