

Curriculum Vitae

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

Professor & Head

Civil Engineering Department, School of Studies of Engineering & Technology

Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur - 495009 (C.G.), India

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Research Interests/Expertise: Alternate Construction Materials, Static and Impact Testing of Concrete, Microstructural Analysis of Concrete

Educational Qualifications:

Ph.D. from IIT Kharagpur in Structural Engineering

M.Tech. from NIT Surathkal in Structural Engineering

B.Tech. from Nagarjuna University in Civil Engineering

DCE from MVGR Govt. Polytechnic, AP in Civil Engineering

SSC from Govt. High School, AP

Teaching and Research 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 Completed:

- 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.**

Book Published:

- 1) 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

2) Title: **Structural Analysis: Indeterminate Structures**

Publisher: **CRC Press Taylor and Francis**

Year: **Accepted for Publication**

Author: **Meesala Chakradhara Rao**

ISBN: **ISBN: 978-1-032-91378-0 (hbk) ISBN: 978-1-032-88910-8 (pbk) ISBN: 978-1-003-56295-5 (ebk)**

Research Guidance

M.Tech: 04

Ph.D.: completed (03), ongoing (01)

Research Publications

National & International Journals: 22

National & International Conferences: 17

International/National Journal

- Tanuja Gupta, Vikas Saraswat, and **Chakradhara Rao Meesala** (2024), “Effect of recycled aggregate on properties of blended geopolymer concrete cured at ambient temperature”. *Advances in Concrete Construction*, DOI: <https://doi.org/10.12989/acc.2024.18.3.191>(Q2)
- Shivendrasingh Rathore and **Chakradhara Rao Meesala** (2024), “Influence of Recycled Coarse Aggregate on properties of Fly ash and Slag based Geopolymer Concrete under Oven and Ambient Temperature”. *World Journal of Engineering*, DOI 10.1108/WJE-12-2023-0524 (Q3)
- Gupta, T., and **Chakradhara Rao Meesala**. (2023), “Effect on properties of geopolymer concrete by inclusion of recycled aggregate and methods to enhance the packing density of aggregate”, *World Journal of Engineering*, doi.org/10.1108/WJE-04-2023-0088.(Q3)
- 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). (Q1)
- 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) (Q3)
- 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, 64(5), pp. 940-947, *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)*, 23(5), pp. 3073-3090, 08-10-2021 <https://doi.org/10.1002/suco.202100354> (SCI, IF 3.131, Citations: 09) (Q1)
- **Chakradhara R Meesala**, Nikhil K Verma, Shailendra Kumar (2020) Critical review on fly-ash based geopolymer concrete. *Structural Concrete, (fib Wiley)*, 21(3), pp. 1013-1028, doi.org/10.1002/suco.201900326 (SCI, IF 3.131, Citations: 56) (Q1)
- **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)*, 22(S1), pp. E105-E120, 12-08-2020, doi.org/10.1002/suco.202000103, (SCI, IF 3.131, Citations: 09) (Q1)
- **Chakradhara R Meesala** (2019). Influence of different types of fibre on the properties of recycled aggregate concrete. *Structural Concrete, (fib Wiley)*, 20(5), pp. 1656-1669, 23-07-2019, DOI: 10.1002/suco.201900052. (SCI, IF 3.131, Citations: 20) (Q1)

- **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, 27-01-2018, doi: 10.1007/s42107-018-0011-x (**Scopus, Impact Score: 1.6, Citations 25**)(Q3)
- 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. <https://www.icjonline.com/archives/2017/01>, January 2017 ISSN: 00194565, January, (**Scopus, IF: 0.243, Citations 04**)(Q3)
- 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; <https://doi.org/10.1016/j.conbuildmat.2015.12.101>, ISSN: 0950-0618. SCI March 2016, (**SCI, IF: 6.14, Citations: 31**) (Q1)
- 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, DOI: <http://dx.doi.org/10.12989/acc.2014.2.3.229>, ISSN: 2287-5301, Online (2287-531X) (**ESCI, IF: 3.214, Citations: 08**) (Q2)
- **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**)(Q3)
- **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**)(Q3)
- **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**)(Q1)
- **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**) (Q1)
- **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**) (Q3)

International/National Conferences

- Tanuja Gupta and **Chakradhara Rao M.** (2023). Strength of GPC with treated recycled aggregate. **Proceedings of the International conference on “Trends in Energy and Environmental Research for Sustainable Development (TEERSD-2023), November 02-03, 2023**, Organised by the Department of Chemical Engineering, guru ghasidas Vishwavidyalaya, Bilaspur, india.
- Nikhil Kumar Verma, **Chakradhara Rao M., Shailendra Kumar**, (2023). Influence of curing condition on compressive strength of low grade fly ash based geopolymer concrete, **Proceedings of the International conference on “Trends in Energy and Environmental Research for Sustainable Development (TEERSD-2023), November 02-03, 2023**, Organised by the Department of Chemical Engineering, guru ghasidas Vishwavidyalaya, Bilaspur, india.

- 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.

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/Organised

- **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 **GLAN (MHRD) during 12-02-2018 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, Technopress (SAGE).

Consultancy Works completed at Civil Engineering Department, GGV Bilaspur

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

Administrative Responsibilities at GGV

- Convener, CEC & CMC of the University
- Head, Civil Engineering Department, w.e.f. 08-06-2024 to till date
- Chairman, BoS and DRC of the Civil Engineering Department since 08-06-2024 to till date
- Member Academic Council since 08-06-2024 to till date
- Coordinator, University Engineering Section w.e.f. March 2023 to till date.
- Member, B.Tech. Ordinance 2022-23 Committee
- Convener of AAA Committee for School of Life Sciences
- Hold the position of Head, Civil Engineering Department w.e.f. 28-06-2017 to 27-12-2021
- Administrative Warden, SVBH since January 2022 to March 2023
- 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 (08-06-2024 to till date)
- 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

Dr. M. Chakradhara Rao