Dr. M. B. Venkata Rao

Professor of Practice

Education: PhD - NIT Warangal
Email: mbvr_mme@rgukt.ac.in

PROFESSIONAL EXPERIENCE:

1. Working as Professor of Practice at RGUKT, Basar from February 2026 to present.

2. Worked with Rashtriya Ispat Nigam Limited, Visakhapatnam Steel Plant in Quality Department, Steel Melt Shop, Continuous Casting Department, Corporate Office and Sinter Plant at various capacities up to General Manager (Operations).

RESEARCH AREAS:

Structure – property correlations, Alloy development, Welding technology, Corrosion etc.

COUNTRIES VISITED AND TRAININGS ATTENDED:

- **Attended the international Convention on Quality Control Circles** *ICQCC-20221 at Jakarta, Indonesia from 15th to 18th November, 2022*

- **Attended Annual Reliability and Maintainability Symposium** *(RAMS) during January 22- 25, 2018 in Reno, NV, USA and presented technical paper, "Achieving excellence in steel quality through reliability"***.**

- **Attended Brazil Steel plant's study tour (Knowledge exchange programme) and visited** V&M do Brasil, Gerdau Acominas, Steelmaking Specialists Seminar at Serra Palace Hotel, CBMM FerroNio-bium Mining and Smelting Metallurgical Facility, Companhia Sideru´rgica Nacional (CSN), ThyssenKrupp CSA Sideru´rgica do Atl˜antico, Air Liquide Air Separation Unit, Usiminas-Cubatao, ArcelorMittal Tubarao *for 12 days in 2011 at Brazil*

- **Training programme in steel making and continuous casting technologies** *21 day programme in Austria at Linz and Donawitz steel plants in 1995*

- **Training programme on Blast Furnace, Steel Making and Quality Control Aspects** *6 months programme in Bokaro Steel Plant*

PATENTS:

- **Title:** High strength earthquake corrosion fireand fatigue resistant steel, Patent application no: 202241069546 DATED 02.12.2022.
- **Title:** A process for minimizingcrumbling of steel slag using fly ash, Patent application no: 201641000667, DATED 07.01.2016
- **Title:** Modified treatment method for effective modification of oxide inclusions using calcium in high Sulphur Al-killed steel, Patent application no: 7048/CHE/2015 DATED 29.12.2015, Patent awarded on 14.03.2024
- **Title:** Recycling of gas cleaning plant sludge in steel making process, Patent application no: 5510/CHE/2012 dated 31.12.2012. Patent awarded on 22.03.2021

JOURNAL PUBLICATIONS:

1. Suguna Soumya Varanasi, Bhaskara Venkata Rao Mandalika, and Ashok Kamaraj B_2O_3 Added Fluxes and Slags for Sustainable Iron and Steelmaking Processes: A State-of-the-art Review." Steel research International (2025): https://doi.org/10.1002/srin.202500575.

2. Gollapalli, Veerababu, Ranjan Kumar Pathak, Bhaskara Venkata Rao Mandalika, Santanu Dey, and Chenna Rao Borra. "Evolution and Transformation of Inclusions in Calcium-Treated Low-Carbon Si–Mn Killed Steel." Transactions of the Indian Institute of Metals (2024): 1-11.

3. Mandalika Bhaskara Venkata Rao, Srinivasa Rao Bonta, Ram Jee Soni, Syamsundar Annamraju, and Narasaiah Nayaka. "Development of High Strength Fire-Resistant Earthquake Steel." Journal of Materials Engineering and Performance 33, no. 4 (2024): 1959-1974.

4. Rao, Mandalika Bhaskara Venkata, Annamraju Syamsundar, and Nayaka Narasaiah. "Study on arc and TIG welding of earthquake-resistant structural steels with a higher carbon equivalent." The International Journal of Advanced Manufacturing Technology (2022): 1-18.

5. Rao, Mandalika Bhaskara Venkata, Annamraju Syamsundar, and Nayaka Narasaiah. "Development of seismic resistant steel with high strength and corrosion resistance." Materials Today: Proceedings 57 (2022): 553-560.

6. Veerababu Gollapalli, Srinivasa Rao Tadivaka, Chenna Rao Borra, Suguna Soumya Varanasi, Phani S. Karam-ched, and M. B. Venkata Rao."Investigation on stabilization of ladle furnace slag with different additives." Journal of Sustainable Metallurgy 6 (2020): 121-131.

7. Varanasi, Suguna Soumya, Venu Madhava Rao More, M. Bhaskar Venkata Rao, Sankar Reddy Alli, Anil Kumar Tangudu, and Dey Santanu. "Recycling ladle furnace slag as flux in steelmaking: a review." Journal of Sustainable Metallurgy 5, no. 4 (2019): 449-462.

8. Kumar, Binay, Sachin Mishra, M. B. V. Rao, and Gour Gopal Roy. "Experimental investigation of recovery and efficiency of calcium addition through cored wire in steel melt at Visakhapatnam Steel Plant." Ironmaking & Steelmaking 46, no. 5 (2019): 454-462.

9. Gollapalli, Veerababu, MB Venkata Rao, Phani S. Karamched, Chenna Rao Borra, Gour G. Roy, and Prakash Srirangam. "Modification of oxide inclusions in calcium-treated Al-killed high sulphur steels." Ironmaking & Steelmaking 46, no. 7 (2019): 663-670.

10. Syamsundar, A., and Rao MB Venkata. "Achieving Excellence in Steel Quality through Reliability." In 2018 Annual Reliability and Maintainability Symposium (RAMS), pp. 1-7. IEEE, 2018.

11. Khurana, Bharat, Stephen Spooner, M. B. V. Rao, Gour Gopal Roy, and Prakash Srirangam. "In situ observation of calcium oxide treatment of inclusions in molten steel by confocal microscopy." Metallurgical and Materials Transactions B 48 (2017): 1409-1415.

12. Kumar, D., Hechu, K., Warnett, J.M., Rao, M.B.V., Williams, M.A., Sridhar, S., Roy, G.G. and Srirangam, P., 2016. Confocal microscopy studies on oxide inclusions in Ca treated steels.

13. Prasad, N. Thulasi, K. N. V. V. Murthy, Sridhar Muddada, Sucheta Sadhu, G. Dharani, S. Ramesh, S. V. S. Phani Kumar, MB Venkata Rao, A. Syamsundar, and M. A. Atmanand. Book Chapter "Ocean Applications for Carbon Dioxide Sequestration." Geologic Carbon Sequestration: Understanding Reservoir Behavior (2016): 231-245.

14. Prasad, N. Thulasi, Sucheta Sadhu, K. N. V. V. Murthy, G. Dharani, SVS Phani Kumar, S. Ramesh, M. A. Atmanand, M. B. Venkata Rao et al. "Carbon dioxide fixation: waste material utilization for under water applications." In 2015 IEEE Underwater Technology (UT), pp. 1-5. IEEE, 2015.

15. M. B. Venkata Rao, G. G. Roy, S. K. Sahu and P. B. C. Rao. "Argon purging through Tundish Mono Block Stopper – A Process improvement at VSP" Published in IIM Metal News (2010).

INTERNATIONAL / NATIONAL CONFERENCE PUBLICATIONS:

1. Suguna Soumya Varanasi, Kakara Sripushpa, Mandalika Bhaskara Venkata Rao, Shaik Mahboob Basha, Ashok Kamaraj "Characterization and assessment of B2O3 added LF Slag", 12th International Conference on Molten Slags, Fluxes and Salts (MOLTEN 2024) held in Brisbane, Australia during 17 - 19 June 2024.

2. Suguna Soumya Varanasi, M.B.Venkata Rao, Ashok Kamaraj "Role of B2O3 in iron and steelmaking slags: A State-of-the-Art Review", The 4th International Metallurgical process workshop for young scholars (IM-PROWYS 2023) held during 13th to 15th October, 2023 in China.

3. M. B. Venkata Rao, A. Syamsundar, N. Narasaiah, "A study on earth quake resistant steel", 2019/9/27, International Conference on Advances in Minerals, Metals, Materials, Manufacturing and Modelling 2019, NIT, Warangal, India

4. Ranjan Kumar Pathak, Kanan Sahoo, G. Veera Babu, M. B. Venkata Rao, DSV Seshukumar, V. Shashikanth and K. Radhakrishna, "Optimization of De-oxidizers by simultaneous addition of Si, Al and Mn for achieving quality steel" presented in International Conference on Advances in steel, Power and construction technology organized by OP Jindal Institute of Technology, Raigarh, during January, 2015.

5. Prasad, N. Thulasi, Sucheta Sadhu, K. N. V. V. Murthy, Srinivasula Reddy Pilli, S. Ramesh, SVS Phani Kumar, G. Dharani, M. B. Venkata Rao et al. "Carbon-dioxide fixation by artificial reef development in marine environment using carbonated slag material from steel plant." In OCEANS 2014-TAIPEI, pp. 1-5. IEEE, 2014

6. Kanan Sahoo, M. B. Venkata Rao, K. Srinivas and D.S.V. Seshu Kumar "De-phosphorization in Steelmaking: A VSP perspective" in Science and technology of Iron & Steel Making (STIS) – 2013 organized at Jamshedpur (2013)

7. S. Jayaraman, B. Chattopadhyay, M. B. Venkata Rao and K. Srinivasa Rao "Improvement in Secondary Metallurgy to produce high quality steel at VSP" in 41st steel making operating committee organized at Tata Steel (2008).

8. G. Shankar, S. Jayaraman, AK Rama Rao and MB Venkata Rao "Steel Quality Improvement at VSP" in 43rd National Metallurgists' day, 59th Annual Technical meeting IIM at all Chennai (2005).

9. G. Shankar, S. Jayaraman, AK Rama Rao and MB Venkata Rao "Liquid Steel Quality for Continuous Casting at VSP" Proceedings of International Conference on Continuous Casting past, present & future held at Jamshedpur (2005).

10. A. K. Barnwal, S.K.Sahu and M. B. V. Rao "Tundish Refractory Practice in VSP" Proceedings of Refractory Management in Steel Making (2002).

REVIEWER:

- ❖ Reviewer for International Journal of Materials Engineering and Performance, Springer Nature and ASM inter-national journal
- ❖ Reviewer for Journal of Sustainable metallurgy, Springer Nature and TMS - The Minerals, Metals & Materials Society
- ❖ Reviewer for Steel Research International Journal - published by Wiley.

MEMBERSHIP OF PROFESSIONAL BODIES:

- Life member of The Indian Institute of Metals, Kolkata, India
- Life member of The Indian Society for Training & Development

AWARDS:

- ❖ Jawaharlal Nehru Award (highest recognition award of Rashtriya Ispat Nigam Limited) for the year 2022-23 for the outstanding performance.

- ❖ Long standing award for successfully completing 25 years of service in Rashtriya Ispat Nigam Limited.

LEADERSHIP:

- PhD Guidance Co-guide to Ms. Suguna Soumya Varanasi, Pursuing PhD in Indian Institute of Technology, Hyderabad, Telangana State, India

- Organizing committee member of "Technological advancements and development of new grades in long products" a two day workshop "PROLONG" scheduled April, 2019 at TTI Auditorium, RINL, Visakhapatnam Steel Plant

- Organized a workshop on "Disposal of slag and other waste generated leading to zero waste during March, 2018 at multipurpose hall, Ukkunagaram, Rashtriya Ispat Nigam Limited, Visakhapatnam.

- Organized a work shop on "Development of value added ceramic products utilizing solid wastes generated at Visakhapatnam Steel Plant". The main objective of the workshop is to make available the knowhow developed to utilize solid wastes generated at Visakhapatnam Steel Plant for manufacturing Ceramic Tiles organized on 27th April, 2013.