

VARUN A BAHETI, Asst. Prof, *since 11 Dec'19*, मैटेल्जर्किकल एंड मैटेरियल्स इंजीनियरिंग, IIT Roorkee
(412 Citations, h-index: 11, i10-index: 13, [Google Scholar](#))

ACADEMIC DETAILS

Malaviya National Institute of Technology, Jaipur

B.Tech, Metallurgical and Materials Engineering Rank 2, CGPA: 9.23/10 2006–2010

Indian Institute of Science, Bangalore

ME, Materials Engineering 1st class with Distinction, CGPA: 7.1/8 2010–2012

PhD, Materials Engineering Supervisors: Profs. Alope Paul & Praveen Kumar 2012–2017

Research Associate, Materials Engineering July' 2017 – April' 2018

Indian Institute of Technology, Kharagpur

DST Inspire Faculty, Metallurgical and Materials Engineering May' 2018 – Dec' 2019

HONORS & AWARDS

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|------------------------------|---------------------------------|-----------|
| 1) Inspire Faculty Award | DST, India | 2018–2023 |
| 2) James Clerk Maxwell Prize | Philosophical Magazine | 2017 |
| 3) Best Presentation Award | Talk in Conference, London, UK | 2017 |
| 4) IISc Fellowship | Research grant | 2017–2018 |
| 5) MHRD Scholarship, India | ME, IISc Bangalore, India | 2010–2012 |
| 6) AIR – 10, GATE Score: 636 | GATE: Metallurgical Engineering | 2010 |

PUBLICATIONS

1. **S. Yadav, V.A. Baheti**, A prominent role of molar volume on the estimated diffusion parameters in Cobalt–Zinc system: Revisited, *Scripta Materialia* 274 (2025) 117124. *A novel perspective unavailable since almost 56 years*, [doi](#) IF 5.6 (2024)
2. **S. Yadav, V.A. Baheti**, Solid–state growth behaviour of phases in the Nb–Zn diffusion couple, *Scripta Materialia* 268 (2025) 116839. *An article presenting a new relation for computing the driving force for diffusion in line compounds*, [doi](#) IF 5.6 (2024)
3. **S. Yadav, V.A. Baheti**, Phase evolutions and the growth of Kirkendall voids in the V–Zn system, *Scripta Materialia* 255 (2025) 116391. *First experimental evidence of voids formation in a system of bio-technological importance*, [doi](#) IF 5.6 (2024)
4. **S. Yadav, V.A. Baheti**, An Overview of Intermediate Phases in Group VB (M = V, Nb) Metal–Zinc Systems, *Journal of Phase Equilibria and Diffusion* 46 (2025) 512-515. *A critical evaluation presenting the latest phase diagrams of V–Zn and Nb–Zn systems*, [doi](#) IF 1.7 (2024)
5. **S. Yadav, V.A. Baheti**, A new experimental result indicating 3 separate phase fields of ϵ , ϵ_1 , ϵ_2 and the estimation of diffusion coefficients in the Mn–Zn system, *Journal of Alloys and Metallurgical Systems* 10 (2025) 100183. *An article resolving the controversy of more than 6 decades*, [doi](#) CS 5.0 (Apr 2026)
6. **S. Yadav, V.A. Baheti**, Viewpoint: Understanding diffusion characteristics reported in Ti–Zn and Cr–Zn systems, *Metals and Materials International* Accepted (2026). IF 4.0 (2024)
7. S Roy, A Bhowmik, A Tripathi, **V.A. Baheti** and S Roy, A diffusion-based understanding on the effect of trace Mn and Zr addition in the precipitate coarsening kinetics of Al-Cu alloy, *Materials Letters* 377 (2024) 137390. [doi](#) IF 2.7 (2024)
8. U. Bansal, **A.K. Thakur, V. A. Baheti**, S.B. Singh, A. Mondal, A.K. Halder, A. Chakraborty, K. Chattopadhyay, A. Paul, Diffusion-controlled growth mechanism of phases and the microstructural evolution in the Ni-Zn system, *Materials Characterization* 202 (2023) 112982. [doi](#) IF 5.5 (2024)
9. A. Amudha, R. Ravi, **V. A. Baheti**, Interdiffusion studies in the Co–Sb system, *Diffusion Foundations* 27 (2020) 35–39. [doi](#)
10. **V.A. Baheti**, Phase evolutions and growth kinetics in the Co–Sn system, *SN Applied Sciences: A Springer Nature journal* 1(2) (2019) 185. [doi](#) IF 2.8 (2023)
11. **V. A. Baheti**, R. Ravi, Interdiffusion study of the topologically closed packed μ phase and the phase boundary compositions in the Fe–Mo system, *Intermetallics* 113 (2019) 106586. [doi](#) IF 4.8 (2024)
12. **V.A. Baheti** and A. Paul, Development of different methods and their efficiencies for the estimation of diffusion coefficients following the diffusion couple technique, *Acta Materialia* 156 (2018) 420-431. *An article settling the discussion of last 6 decades*, [doi](#) IF 9.4 (2022)
13. **V.A. Baheti**, S. Kashyap, P. Kumar, K. Chattopadhyay and A. Paul, Solid–state diffusion–controlled growth of the phases in the Au–Sn system, *Philosophical Magazine* 98(1) (2018) 20-36. [doi](#) IF 1.948 (2021)

14. **V.A. Baheti**, S. Kashyap, P. Kumar, K. Chattopadhyay and A. Paul, Bifurcation of the Kirkendall marker plane and the role of Ni and other impurities on the growth of Kirkendall voids in the Cu–Sn system, *Acta Materialia* 131 (2017) 260-270. [doi](#) IF 9.4 (2022)
15. **V.A. Baheti**, S. Kashyap, P. Kumar, K. Chattopadhyay and A. Paul, Effect of Ni on growth kinetics, microstructural evolution and crystal structure in the Cu(Ni)–Sn system, *Philosophical Magazine* 97(21) (2017) 1782-1802. *One of the James Clerk Maxwell Prize winning articles 2017*, [doi](#) IF 1.948 (2021)
16. **V.A. Baheti**, S. Kashyap, P. Kumar, K. Chattopadhyay and A. Paul, Solid–state diffusion–controlled growth of the intermediate phases from room temperature to an elevated temperature in the Cu–Sn and the Ni–Sn systems, *Journal of Alloys and Compounds* 727 (2017) 832-840. [doi](#) IF 6.371 (2022)
17. **V.A. Baheti**, P. Kumar and A. Paul, Effect of Au, Pd and Pt addition in Cu on the growth of intermetallic compounds and the Kirkendall voids in the Cu–Sn system, *Journal of Materials Science: Materials in Electronics* 28(22) (2017) 17014-17019. [doi](#) IF 2.8 (2023)
18. **V.A. Baheti**, P. Kumar and A. Paul, Growth of phases in the solid–state from room temperature to an elevated temperature in the Pd–Sn and the Pt–Sn systems, *Journal of Materials Science: Materials in Electronics* 28(24) (2017) 18379–18386. [doi](#) IF 2.8 (2023)
19. **V.A. Baheti**, S. Islam, P. Kumar, R. Ravi, R. Narayanan, H. Dong, V. Vuorinen, T. Laurila and A. Paul, Effect of Ni content on the diffusion–controlled growth of the product phases in the Cu(Ni)–Sn system, *Philosophical Magazine* 96(1) (2016) 15-30. [doi](#) IF 1.948 (2021)
20. **V.A. Baheti**, S. Santra, S. Roy, K. Perumalsamy, S. Prasad, R. Ravi and A. Paul, Phase evolutions, growth kinetics and diffusion parameters in the Co–Ni–Ta system, *Journal of Alloys and Compounds* 622 (2015) 1033-1040. [doi](#) IF 6.371 (2022)
21. **V.A. Baheti**, R. Ravi and A. Paul, Interdiffusion study in the Pd–Pt system, *Journal of Materials Science: Materials in Electronics* 24(8) (2013) 2833-2838. [doi](#) IF 2.8 (2023)
22. **V.A. Baheti**, S. Roy, R. Ravi and A. Paul, Interdiffusion and the phase boundary compositions in the Co–Ta system, *Intermetallics* 33 (2013) 87-91. [doi](#) IF 4.8 (2024)

CONFERENCES

1. Solid-state growth of intermediate phases in Vanadium-Zinc and Niobium-Zinc diffusion couples, **S. Yadav and V. A. Baheti**, MMED RSD (Research Scholars' Day), IIT Roorkee, 2025 (Students' Talk) *Best Presentation Award*
2. An overview of intermediate phases in metal–zinc systems, **S. Yadav and V. A. Baheti**, Intermetallics Conference, Bad Staffelstein, Germany, 2025
3. Solid-state growth of the intermediate phases in the Metal-Zn systems, **S. Yadav and V. A. Baheti**, MMED RSD, IIT Roorkee, 2024
4. Phase evolutions in the Metal–Zinc systems, **S. Yadav and V. A. Baheti**, EMSI-2024 (International Conference on Electron Microscopy & XLII Annual Meeting of the Electron Microscope Society of India), IIT Bombay, 2024
5. Solid-state growth of phases in metal-Zn systems, **S. Yadav and V. A. Baheti**, 3rd IRDC, IIT Roorkee, 2024
6. Diffusion Couple Investigation of the Cu(Ni)-Sn system, **V. A. Baheti***, S. Kashyap, K. Chattopadhyay, P. Kumar and A. Paul, Platinum Jubilee Conference on Perspectives in Materials Research (PMR 2022), **Offline Conference**, IISc Bangalore, 21st to 23rd Dec 2022, **Invited Talk**.
7. Development of different methods and their efficiencies for the estimation of diffusion coefficients following the diffusion couple technique, **V. A. Baheti*** and A. Paul, 58th National Metallurgists Day and 74th Annual Technical Meeting, **NMD–ATM 2020** Online Conference, IIT Bombay, 23rd to 26th Feb 2021.
8. Investigation of the growth of phases in the Cu(Ni)–Sn system, **V. A. Baheti***, S. Kashyap, K. Chattopadhyay, P. Kumar and A. Paul, **Intermetallics Conference 2021**, held *offline/online* at the Educational Center Kloster Banz in Bad Staffelstein, Germany, 4th to 8th Oct 2021.
9. Investigation of the Growth Kinetics of Phases in Ni–Sn System, **V.A. Baheti**, S. Kashyap, P. Kumar, K. Chattopadhyay and A. Paul, *19th International Conference on Electronic Packaging, Systems, and Technology, London, United Kingdom, 2017 (Talk)* **Best Presentation Award**
10. Bifurcation of the Kirkendall marker plane and the role of impurities on the growth of Kirkendall voids in the Cu–Sn system, **V.A. Baheti**, S. Kashyap, P. Kumar, K. Chattopadhyay and A. Paul, *30th Annual Students' symposium, Dept. of Materials Engg., IISc, 2017 (Talk)*
11. Effect of Ni content on the diffusion-controlled growth of the product phases in the Cu(Ni)–Sn system, **V.A. Baheti**, P. Kumar and A. Paul, *NMD–ATM Conference, IIT Kanpur, 2016 (Talk)*
12. Effect of Ni content on the diffusion-controlled growth of the product phases in the Cu(Ni)–Sn system, **V.A. Baheti**, S. Islam, P. Kumar, R. Ravi, R. Narayanan, H. Dong, V. Vuorinen, T. Laurila and A. Paul, *29th Annual Students' symposium, Dept. of Materials Engg., IISc, 2016 (Talk)*
13. Growth kinetics of phases in Cu–Sn and Ni–Sn systems, **V.A. Baheti**, P. Kumar and A. Paul, *28th Annual Students' symposium, Dept. of Materials Engg., IISc, 2015 (Talk)*