

Kale Amol Baburao

Material Engineer, Research Associate

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📍 Suncheon, South Korea

🌐 [Amol B. Kale](#)

℞ [Amol B. Kale](#)

🌐 [Dr. Amol Kale](#)

Skills

- Materials Characterization
- Mechanical Testing
- Corrosion Testing
- EBSD Analysis
- Residual Stress analysis (XRD)
- Additive Manufacturing
- Spark Plasma Sintering
- 3D Tomography
- MS-Office
- Twin Roll Casting (TRC)
- Billet Casting
- Extrusion test
- Wear Test
- Digital Image Correlation (DIC)

Education

- **Ph.D, Materials Science and Engineering**
Sunchon National University, South Korea
Completed in 2020
- **M.Sc. Chemistry**
Swami Ramanand Teerth Marathwada University, Nanded, India
Completed in 2012
- **B.Sc. Chemistry**
Swami Ramanand Teerth Marathwada University, Nanded, India
Completed in 2010

About Me

Dedicated and detail-oriented material engineer with 5+ years of experience. Material Engineer with specialized expertise in powder metallurgy and proven success in the material science lab. Focused on creating cost-effective, high-quality materials for industrial applications.

Professional Experience

Research Associate, **2023 – Present**
Pine Tree PosMagnesium Co. Ltd (Earlier POSCO Magnesium strip Plant), Suncheon, South Korea.

Key responsibilities:

- **Team Management:** Leading a team in extensive testing and characterization of various magnesium alloys (E-form, AZ31B, Heat Sinkers, POSNOBLE Mg). Utilizing diverse mechanical testing methods for quality assurance and performance enhancement.
- **Process Optimization:** Implementing innovative process optimization strategies. Achieving substantial yield improvements, cost savings, and enhanced product quality across multiple product lines.
- **New Product Development (NPD):** Ensuring on-time delivery of NPDs within defined timeframes to boost the top line of the business.
- **Laboratory Management:** Managing laboratory works, including detailed result analysis and inferences. Reviewing records, analytically preparing products or materials, and developing new methods for smooth operations.

Postdoctoral Researcher, **2022 – 2023**
Inha University, Incheon, South Korea.

Key responsibilities:

- I was actively involved in the "Mechanical and Corrosion behavior of WC-12Co, Al-10Si-Mg, Lightweight steel and Inconel 718 alloys fabricated by AM lattice structure and cold spray techniques.
- I have worked on the HVOF, Plasma, and Wire Arc coatings of Mo-alloy and WC-12Co.
- Also, I worked on the mechanical behaviors of 316L SS fabricated by wire laser additive manufacturing (WLAM).
- Designed research projects and alternative approaches and discussed results with the professor

Teaching Assistant, **2021 – 2022**
Rajeev Gandhi Institute of Polytechnic, Latur, India.

Key responsibilities:

- **Subjects:** Applied Mechanics, Strength of Materials, Mechanical engineering materials, and Manufacturing Process

Postdoctoral Researcher, **2020 – 2021**
Sunchon National University, Suncheon, South Korea.

Key responsibilities:

- I handled a project called "Effect of hydrogen on the mechanical behaviour of AM materials" where I intensively worked on hydrogen charging and corrosion study to understand the fracture mechanism in different alloys.

Computer Skills

- JMATPro
- TSL-OIM
- Image J analysis
- MS-Office
- Matlab

Languages

- English
- Hindi
- Marathi

Certifications

- Best Poster Presentation Award in ICAS 2018
- Best Poster Presentation Award in KIMM 2016

Publications

- *KW Kim, [AB Kale](#), YH Cho, SH Park, KA Lee*, **Microstructural and wear properties of WC-12Co cemented carbide fabricated by direct energy deposition.** Wear 518-519 (2023) [DOI-link](#).
- *Tae-Hoon Kang, [Amol B. Kale](#), Han-Soo Kim and Kee-Ahn Lee*. **Wear properties of Fe-16Mn-10Al-5Ni-0.86C lightweight steel manufactured by laser powder bed fusion.** Powder Metallurgy (2023) [DOI-link](#)
- *[Amol B. Kale](#), Preetham Alluri, Abhishek K. Singh, Shi-Hoon Choi*. **The deformation and fracture behaviour of 316L SS fabricated by SLM under a mini V-bending test.** IJMS 196: 106292 (2021) [DOI-link](#)
- *[Amol B. Kale](#), Byung-Kyu Kim, Dong-Ik Kim, E.G. Castle, M. Reece, Shi-Hoon Choi*. **An Investigation of the corrosion behavior of 316L stainless steel fabricated by SLM and SPS techniques.** Materials Characterization 163, 110204 (2020) [DOI-link](#)
- *[Amol B. Kale](#), Jaiveer Singh, Byung-Kyu Kim, Dong-Ik Kim, Shi-Hoon Choi*. **Effect of initial microstructure on deformation heterogeneities of 316L stainless steels fabricated by selective laser melting processing.** jmater res technol. ;9(4):8867–8883, (2020) [DOI-link](#)
- *[Amol B. Kale](#), Jaiveer Singh, Eun-Young Kim, WiGeol Seo, Mike Reece, Shi-Hoon Choi*. **Deformation and Fracture Behaviors of 316L Stainless Steels Fabricated by SLM Techniques under Uniaxial Tension.** ICAS 3-0729 pg.176 (2018)
- *[Amol B. Kale](#), Atanu Bag, Ji-Hyun Hwang, Elinor G. Castle, MikeJ. Reece, and Shi-Hoon Choi*. **The deformation and fracture behaviors of 316L stainless steels fabricated by spark plasma sintering technique under uniaxial tension.** Materials Science and Engineering A, 707,362-372, (2017) [DOI-link](#)
- *Ikhe Amol Bhairuba, [Kale Amol Baburao](#), Jaehyang Jeong, Michael J. Reece, Shi-Hoon Choi, Myoungho Pyo*. **Perfluorinated polysiloxane hybridized with graphene oxide for corrosion inhibition of AZ31 magnesium alloy.** Corrosion Science, 109, 238245 (2016) [DOI-link](#)
- *Tae-Hoon Kang, [Amol B. Kale](#), Han-Soo Kim and Kee-Ahn Lee*. **Fabrication, microstructure, and mechanical properties of Fe-16Mn-10Al-5Ni-0.86C lightweight steel manufactured by direct energy deposition.** Under review.
- *Tae-Hoon Kang, [Amol B. Kale](#), Han-Soo Kim and Kee-Ahn Lee*. **Microstructure and Tensile Properties of Austenitic Fe-15Mn-10Al-5Ni-0.86C Lightweight Steel Manufactured with Laser Powder Bed Fusion Process.** Under review.

References

- **Prof. Shi Hoon Choi**
Department of Advanced Components and Material Engineering Sunchon National University, South Korea
Email: shihoon123@gmail.com
- **Prof. Mike J. Reece**
School of Engineering and Materials Science, Queen Mary University London
Email: m.j.reece@qmul.ac.uk
- **Prof. Kee Ahn Lee**
Department of Materials Science and Engineering, Inha University, Incheon, South Korea
Email: keeahn@inha.ac.kr

Publications

- Tae-Hoon Kang, [Amol B. Kale](#), Han-Soo Kim and Kee-Ahn Lee, **Unit cell topology and mechanical property relationship of Inconel 718 micro lattice Structures manufactured by Selective laser melting**. Under Review
- [Amol B. Kale](#), and Kee-Ahn Lee. **Microstructure, and mechanical properties of 316L SUS fabricated by DED wire laser AM**. Under review.
- [Amol B. Kale](#), and Kee-Ahn Lee. **Effect of processing parameters on the microstructure and mechanical properties of Ti-6Al-4V alloy fabricated by selective laser melting**. Under review.

Conference Presentation

- [Amol B. Kale](#), Jung Hyun Park, Dae Jung Kim, and Kee-Ahn Lee, **Comparative analysis of Microstructure and Mechanical Properties of 316L SUS in wire laser additive manufacturing and laser powder bed fusion**. ([APMA Conference](#))
- [Amol B. Kale](#), Kyoung-Wook Kim, Yong-Hoon Cho, Sun-Hong Park, and Kee-Ahn Lee, **Microstructural and wear properties of WC-12Co cemented carbide fabricated by direct energy deposition** (KIM2023- Autumn Conference) Kim.or.kr
- Wongju Hwang, Tae-hoon Kang, [Amol B. Kale](#), Han Soo Kim, Kee Ahn Lee, **Effect of annealing temperature on the microstructure and mechanical properties of Fe-16Mn-10Al-5Ni- 0.86C lightweight steel hot-rolled sheet**. (KIM2023- Autumn Conference) Kim.or.kr
- Tae-hoon Kang, [Amol B. Kale](#), Yongho Sohn, Kee Ahn Lee, **Microstructure and Mechanical Properties of Inconel 718 lattice structure manufactured by Laser Powder Bed Fusion process, room temperature and 650°C**. (KIM2023- Autumn Conference) Kim.or.kr.
- [Amol B. Kale](#), Yu-Jin Hwang, and Kee-Ahn Lee, **Investigation of Microstructure and Nanoindentation of Cold Sprayed Mo-Coating**. (KIM2023- Autumn Conference) Kim.or.kr.
- [AB Kale](#), KW Kim, YH Cho, SH Park, KA.Lee, **Microstructure and wear behaviors of WC-12Co (wt%) cemented carbide manufactured by direct energy deposition**, (KIM2023-spring) Kim.or.kr.
- KA Lee, KW Kim, Kale AB., YH Cho, SH Park, **Microstructural, compressive and wear properties of WC-12Co cemented carbide manufactured by direct energy deposition**, Korean Ceramic Society Spring Conference 2023.

Conference Presentation

- *Kale Amol Baburao, Jaiveer Singh, Shi-Hoon Choi, Effect of Processing Parameters on Microstructure and Mechanical Properties of 316L SS Fabricated by SLM. Oral presentation (KIM2019-spring)*
Kim.or.kr
- *Amol Kale, Jaiveer Singh, Eun-Young Kim, Wi-Geol Seo, Mike Reece, Shi-Hoon Choi, Deformation and Fracture Behaviors of 316L Stainless Steels Fabricated by SLM Techniques under Uniaxial Tension. (ICAS2018)*
- *Kale Amol Baburao, Atanu Bag, Byung Kyu Kim, Dong-Ik Kim, Shi-Hoon Choi, Investigation of the corrosion behavior of 316L stainless steel fabricated by SPS technique. (KIM-2017 spring).*
- *Amol B. Kale, Ji-Hyun Hwang, Atanu Bag, E.G. Castle, M. Reece, Shi Hoon Choi, Influence of microstructure on the corrosion behavior of SS 316L fabricated by SLM and SPS techniques, (KIM Autumn 2016).*
- *Kim Min-song, Hwang Ji Hyun, Kale Amol B., Shi Hoon Choi, Study on the plastic strain ratio of E-form anisotropic Mg alloy Sheet, (KIM Spring 2016).*
- *Kale Amol Baburao, Ji-Hyun Hwang, Nabeel Jahanzeb, E.G.Catsle, M.Reece, Shi-Hoon Choi, Investigation of Corrosion Behavior of STS 316L Fabricated by SLM and SPS. (Oral) (KIM 2016).*
- *Ji-Hwan Shin, Atanu Bag, Amol Kale, Shi-Hoon Choi, A Study on Nucleation Events and Evolution of Dislocation Slip and Twinning in Mg Using Molecular Dynamics. (Mg-2015 conference Jeju, Korea)*