

Curriculum Vitae of Dr. Veera Venkata Nagaraju

Departamento de Ingenierca Mecánica, Facultad de Ciencias Físicas y Matemáticas (FCFM)

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Google Scholar: <https://scholar.google.com/citations?hl=en&user=a6iF-KcAAAAJ>

Objectives: *Resourceful individual with expertise in metallic materials for engineering activities and methodologies. Interested as a material scientist/ research analyst/ Teaching expertise in a fast paced Universities. Willing to utilize my skills/ abilities and knowledge to accomplish the vision & development of the organization. Intend to build a career in a leading environment with committed and dedicated people, which will help me to explore myself fully and realize my potential.*

Academic Qualifications : 2024 April - Pursuing as **FONDECYT (ANID) Regular Postdoctoral Fellow** in **Departamento Ingeniería Mecánica** at **Universidad de Chile, Santiago** (Facultad de Ciencias Físicas y Matemáticas), **Chile**

Postdoc topic of “**Tunning of surface characteristics by CoNiCrAlY cold-spray coating on boron-sintered PM stainless steels for corrosion resistant applications**”

: 2023 Jan-2024 April Inst. Postdoc Fellow (**Dept. Mechanical Engg.**)
National Institute of Technology, Warangal, India.

Postdoc topic of “**Machinability, Surface Integrity and Pulse characteristics of Ti-16Al-14Nb (α/β) Alloy in Wire-Electric Discharge Machining Process: An Optimization Study**”

: 2022 July – **Ph. D (Dept. Metallurgical and Materials Engg.)**
(**Awarded**) National Institute of Technology, Trichy, India.

Ph.D Thesis awarded on “**Microwave-assisted Hybrid Sintering of Stainless Steel Powder compacts: Metallurgical, Mechanical and Electrochemical properties**”

: 2016 – **M. Tech (Advanced Mater. Sci. and Technol.) (8.56 CGPA)**
National Institute of Technology, Durgapur, West Bengal, India.

Master’s Thesis topic on “**Graphene: Mechanical and thermal properties of graphene.**”

: 2013 – **B.Engg. (Mechanical Engineering), (6.56 CGPA),**
SRKR Engineering College, Andhra University, (AP), India.

- : 2007 – **Class-XII, (percentage: 90.8)** Board of Intermediate Education, Andhra Pradesh, India.
- : 2005 – **Class-X (SSC), (percentage: 85.5)** Board of Secondary Education, Andhra Pradesh, India.

Field of Specializations : Powder metallurgy, Near-net shaped manufacturing
 Production technology (casting & welding processes)
 Physical metallurgy, Materials science engineering
 Mechanical behaviour of materials
 Nanotechnology and Advanced materials
 Metalworking and Manufacturing processes
 Testing and materials characterizations
 Basic mechanical engineering
 Nanomaterials and Nanomanufacturing
 Mechanics of solids, Strength of materials
 Process Simulation (MAT Lab & Python)

Academic Research Experience **Inst. Postdoc fellow:** Jan 2023-June 2024 (NIT Warangal)
Research Scholar: Jan 2018 - Jan 2022 (4 Years),

Academic Research (Ph. D) Topic :

Doctoral research carried out on **Titled: “Microwave-assisted hybrid sintering of stainless steel powder compacts: Metallurgical, mechanical and electrochemical properties”** with the recipient of Ministry of Education (MoE), Govt. of India / NIT Trichy - Institute fellowship for five years period.

Guidance : (HAG) **Prof. T. Srinivasa Rao** and **Prof. S. Kumaran**

Academic Research (Inst. Postdoc 2023-24) Topic : Research carried out on **“Machinability, Surface Integrity and Pulse characteristics of Ti-16Al-14Nb (α/β) Alloy in Wire-Electric Discharge Machining Process: An Optimization Study”**

Guid : **Prof. M. Joseph Davidson**

Academic Research (Postdoc Project Investigator) Topic :

Research project (*FondeCyt 2024-ANID*) pursuing on **“Tunning of surface characteristics by CoNiCrAlY cold-spray coating on boron-sintered PM stainless steels for corrosion resistant applications”**

Sponsoring researcher : **Dr. Ruben Marcos Fernandez Urritia, Profesor asistente**

***Hands-on experiences in
the characterization analysis***

: X-Ray diffraction spectrum
Electrochemical impedance spectroscopy
Scanning/ Transmission electron micrographs
Fourier transform infrared spectrum (FTIR)
Thermal analysis (DSC, DTA)
Cyclic voltammetry studies
Corrosion (PDP) Studies
Thermal conductivity analysis
Optical emission spectroscopy
EC-Lab (electrochemical analysis)
Surface roughness (Talysurf instrument)

***Hands-on experiences in
the equipment's operation***

: High-energy ball milling machine
Aluminium melting furnace
Microwave sintering furnace
Microwave-assisted hybrid sintering facility
Spark plasma sintering unit
Mini arc-melting machine
Rolling equipment
Mini gas atomizer (argon)
Vacuum-assisted hot pressing unit
Microwave hot pressing unit
Glove box & hot furnace CVD
Electrochemical workstation
Powder compaction press
Hot furnaces (Convention)
Oxidation unit
Wirecut-EDM Process
Pin-on-disc (wear) unit
Mechanical mixing (elemental, master alloy)
Ultra-violet & visible Spectroscope
Optical microscope
Optical 3-D Microscopy
Tensile testing equipment
Hardness testing (Vickers and Rockwell)

Scholarly publications – In Journals

1. **Nagaraju, K.V.V., Kumaran, S. and Srinivasa Rao, T.,** (2020). Microwave sintering of 316L stainless steel: Influence of sintering temperature and time, *Mater. Today: Proc.*, **27**(3), 2066-2071. (<https://doi.org/10.1016/j.matpr.2019.09.062>) ISSN: 2214-7853 (Q₂, IF 2.59, Elsevier)
2. **Veera Venkata Nagaraju, K., Kumaran, S. and Srinivasa Rao, T.,** (2021). Electrochemical behavior of various grade P/M stainless steels processed by rapid microwave hybrid sintering (super-solidus) method, *Mater. Lett.*, **302**, 130394. (<https://doi.org/10.1016/j.matlet.2021.130394>) ISSN: 0167-577X (Q₂, IF 3.574, Elsevier)

3. **Veera Venkata Nagaraju, K., Kumaran, S. and Srinivasa Rao, T.,** (2021). Densification kinetics of P/M austenitic (316L) stainless steels processed by rapid microwave hybrid heating method at various conditions, *Adv. Mater. Process. Technol.*, **8**(3), 3539-3552. (<https://doi.org/10.1080/2374068X.2021.1970993>) ISSN: 2374-0698 (Q₂, IF 2.37, Taylor & Francis)
4. **Veera Venkata Nagaraju, K., Kumaran, S. and Srinivasa Rao, T.,** (2022). Microwave sintering response of different grade stainless steels and its influence on metallurgical properties, *Powder Metall.*, **65**(3), 200-213. (<https://doi.org/10.1080/00325899.2021.1981656>) ISSN:0032-5899 (Q₂, IF 2.228, Taylor & Francis)
5. **Veera Venkata Nagaraju, K., Kumaran, S. and Srinivasa Rao, T.,** (2022). Optimization of microwave processing parameters on powder-metallurgical 316L stainless steels, *Mater. Manuf. Process.*, **37**(10), 1-13. (<https://doi.org/10.1080/10426914.2021.2001512>) ISSN: 1042-6914 (Q₁, IF 4.783, Taylor & Francis)
6. **Veera Venkata Nagaraju, K., Kumaran, S. and Srinivasa Rao, T.,** (2022). Microwave-assisted hybrid sintering of 316L powder compacts: microstructure, mechanical and electrochemical properties, *J. Mater. Eng. Perform.*, **31**, 9555–9572. (<https://doi.org/10.1007/s11665-022-06948-5>) ISSN:1059-9495 (Q₂, IF 2.036, Springer)
7. **Naresh, A., Veera Venkata Nagaraju, K., Venkatesh, G., and Vijaya Kumar., B.** (2023) Metallurgical and mechanical characteristics of AA2014-T6 alloy cladding over mild steel IS2062 substrate through friction-stir surfacing process, *J. Mater. Eng. Perform.*, (<https://doi.org/10.1007/s11665-023-08809-1>) (Q₂, IF 2.036, Springer)
8. **Veera Venkata Nagaraju, K., Joseph Davidson, M., Venkatesh, G., Manjaiah. M. and Hari Krishna K.** (2023) Optimization of wire-electric discharge machining process and metallurgical characteristics of Ti-16Al-14Nb (α/β , ML-grade) alloy, *J. Mater. Eng. Perform.*,(<https://doi.org/10.1007/s11665-023-08965-4>) ISSN:1544-1024 (Q₂, IF 2.3, Springer)
9. **Veera Venkata Nagaraju, K., Joseph Davidson, M, Venkatesh, G., Manjaiah. M. and Hari Krishna, K.** (2023) Machinability and pulse characteristics of Ti-16Al-14Nb (α/β) alloy in wire-electric discharge machining process: A surface integrity study, *Proc. Inst. Mech. Eng. E.*, (<https://doi.org/10.1177/09544089241255942>) (Q₂, IF 2.3, Sage)
10. **Hari Krishna, K., Damodhar, K., Joseph Davidson, M., Seethram, R. and Veera Venkata Nagaraju, K.,** (2023) Characteristics of Work Hardening and Constitutive Models Comparisons of Powder Metallurgy Al-5.6%Zn-2%Mg Alloy During Hot Compression, *J. Cent. South Univ.*,**31**: 346-368. (<https://doi.org/10.1007/s11771-024-5568-9>) (Q₁, IF 4.4, Springer)
11. **Hari Krishna, K., Joseph Davidson, M. Dhanush Reddy, G., and Veera Venkata Nagaraju, K.,** (2023) Overcoming Optical Image Challenges in Automatic Grain Size Measurement Using a Novel Computer Vision Algorithm Applied to Hot Deformation of Al-Zn-Mg Powder Metallurgy Alloy, *Mater. Lett.*, **357**, 135743. (<https://doi.org/10.1016/j.matlet.2023.135743>) ISSN: 0167-577X (Q₂, IF 3.574, Elsevier)

12. **Hari Krishna, K., Joseph Davidson, M. Rahul Datta, Veera Venkata Nagaraju, K., and Abeyaram Nithin (2023)** Unravelling the Hot working Behavior, Constitutive Modeling, and Processing Map for controlling the microstructure of sintered Al-Zn-Mg alloy, *Arab. J. Sci. Eng.*, (<https://doi.org/10.1007/s13369-023-08633-8>) ISSN: 2191-4281 (Q₁, IF 2.81, Springer)

Scholarly publications – In Conferences

1. **Nagaraju, K.V.V., Das, D.K. and Sahoo, S., (2015)** “Graphene in railroads”, presented in “International Conference on Nanoscience, Nanotechnology and Advanced Materials”, 14-17 Dec, 2015. organized by GITAM University, Visakhapatnam – A.P-530 045, India, (Proceedings).
2. **Das, D.K., Roy, S., Nagaraju, K.V.V. and Sahoo, S., (2016)** “Graphene, Silicene and Germanene: the triplet”, published in the Souvenir & Proceedings of UGC Sponsored National Seminar on “Advances in Physics During the Last Half Century and its Applications to Society” on 27-28 Feb, 2016, organized by Gangadhar Meher Autonomous College, Sambalpur-768 004, Odisha, India.
3. **Nagaraju, K.V.V., Das, D.K., Roy, S. and Sahoo, S. (2016)** “Calculation of oscillating parameters for graphene”, Proceeding of “International Conference on Engineering Physics, Materials and Ultrasonic (ICEMPU)” on 03-04 June 2016, organized by The Northcap University (NCU), Gurgaon-122 001, Delhi, India. (*Technology Letters* 2348-8531).
4. **Das, D.K., Roy, S. Nagaraju, K.V.V. and Sahoo, S. (2016)** “A comparison between some electrical properties of graphene, silicene and graphene-silicene nanocomposite”, Proceeding of “International Conference on Engineering Physics, Materials and Ultrasonic (ICEMPU)” on 03-04 June 2016, organized by The Northcap University (NCU), Gurgaon-122 001, Delhi, India. (*Technology Letters* 2348-8531).
5. **Nagaraju, K.V.V., Das, D.K. and Sahoo, S., (2017)** “Nanomaterials and its applications”, “International Conference on Emerging Materials Characterizations & Applications- 2017”, held on 15-17 March 2017, at NIT Durgapur-713 213, W.B, India. (Proceedings).
6. **Nagaraju, K.V.V., Kumaran, S. and Srinivasa Rao, T., (2019)** “Microwave sintering of 316L stainless steel: Influence of sintering temperature and time”, International Conference on Materials and Manufacturing Methods (3M – 2019), July 5 - 7, 2019, TEQUIP-III at National Institute of Technology, Tiruchirappalli, Tamil Nadu, India
7. **Nagaraju, K.V.V., Kumaran, S. and Srinivasa Rao, T., (2019)** “Electrochemical behavior of powder metallurgy stainless steels fabricated by rapid microwave assisted hybrid sintering method”, International Symposium on “Advanced Materials for Industrial and Societal Applications” 57th National Metallurgist Day (NMD) Annual Technical Meeting (ATM), 2019 at Thiruvananthapuram, Kerala-695 527, India.
8. **Naresh, A., Veera Venkata Nagaraju, K., Venkatesh, G., and Vijaya Kumar., B. (2023)** “Friction-stir surfacing (FSS) process of aluminum alloy (AA6061) coating over mild steel (IS 2062) substrate”, 1st International Conference on Mechanical Engineering : Researches and

Evolutionary Challenges(ICMech-REC-2023, June 23-25) organized by National Institute of Technology, Warangal, Telangana, 506 004, India

9. **Katika Harikrishna, M. J. Davidson, K.S Rajmohan, K.Veera Venkata Nagaraju**, (2024) “The relationship between deformation parameters and corrosion parameters of the Al-5.6Zn-2Mg powder metallurgy alloy during hot upsetting”, presented in AIMTDR-2023 during 8-10 Dec, 2023, organized by IIT (BHU) Varanasi – 221005, India, (Proceedings).

Journal Reviewer

: One of reviewer of “**Modern Physics Letters B**” (Manuscript number: MPLB-D-17-00418) for title of the paper “Analytical modeling of Graphene –Magnesium Nanocomposite: An advanced material for aerospace applications” (2016).

Workshops/Training Programs

: One-week SERB sponsored workshop on “Current Trends and Future Aspects of the Development of Fuel Cell and other Energy Storage Technologies” held on 29th May -2nd June 2023 organized by Department of Energy and Environment (Vigyan’s Karyashala Scheme), NIT Tiruchirappalli, Tamil Nadu -620015, India.

: One-day workshop on “Defence Materials & Technologies for Aero applications” held on 18th Oct 2019 by Aerospace Resources Panel ARDB, DRDO, New Delhi, organized by Department of Metallurgical and Materials Engineering, NIT Tiruchirappalli, Tamil Nadu -620015, India.

: Two days training program on “High-Resolution Transmission Electron Microscopy, Scanning Electron Microscopy and Scanning Probe Microscopy”- during 14-15th Sept 2018, Organized by NRIIC, PSG Institute in Advanced Studies, Coimbatore, Tamil Nadu-641 004, India.

: Three days training program on “Materials Characterization” organized by Department of Metallurgical and Materials Engineering, Deakin -IIT Madras Centre of Excellence in Advanced Materials and Manufacturing, Kalpakkam-Chennai HRD Centre of Indian Institute of Metals, on 25-28 July-2018, Chennai, Tamil Nadu-600 036, India.

: One day workshop on “Equipment Chronicle-Benchtop to Palmtop” organized by Department of Physics, from 2nd to 3rd February 2017, NIT Durgapur- West Bengal, India.

: Participated in TEQIP-I sponsored workshop on “Advanced Materials & Nanotechnology” (AMN-2016), June 25-26, 2016, organized by Department of Physics, NIT Durgapur-West Bengal-713 213, India.

Co-curricular Activities

: Purchase initiation, file processing and Installation for the facility “**Microwave vacuum sintering furnace**” in the year 2018-2019 (Principal Investigator: **Prof. S. Kumaran**)

- : Purchase initiation, file processing and Installation for the facility “**Microwave hybrid sintering and hot-pressing unit**” in the year 2018-2019 (Principal Investigator: **Prof. S. Kumaran**)
- : Purchase initiation, file processing and Installation for the facility “**Vacuum tubular furnace unit**” in the year 2019-2020 (Principal Investigator: Prof. S. Kumaran)
- : Bills and fund processing claiming for the Project sponsored by **DST-SERB** (Dept. of Science & Technology-Science & Engineering Research Board)-2019-2020
- : Bills and fund processing claiming for the Project sponsored by **CSIR** (Council of Scientific and Industrial Research)-2019-2020

In-charge (i/c) for Lab facilities: Electrochemical workstation (Biologic & OrigaLys)
 High Energy ball milling (Retsch PM 400)
 Glove box (argon operated)
 Spark plasma sintering equipment
 Mini arc-melting equipment
 Microwave sintering equipment
 Microwave-assisted hybrid sintering equipment
 Microwave hot-pressing
 Vacuum-assisted hot pressing
 Magnesium/ Aluminium Melting Furnace
 Mini-Gas Atomizer (Argon)
 Powder Compaction Press
 High-Temperature Furnaces, Oxidation unit
 Polishing, Grinding, Lathe Operation

In-charge : “**Powder Metallurgy**” Laboratory Scholars (M. Tech & Ph.D., 18 No.) technical activity in charge under the guidance of **Prof. S. Kumaran**, in the academic year 2021-22.

M. Tech Projects Assisted : **Ailapaka Prasanth (212317001)**, “Corrosion and mechanical behavior of austenitic stainless steel powder compacts consolidating by microwave sintering” in 2018-2019, guided by Prof. T. Srinivasa Rao.

: **Ratna Priyanka Karumuri (212218007)**, “Development, testing and characterization of as-fabricated powder metallurgical Ti-25Al-12.5Nb (Vacuum Arc-melted) intermetallic master-alloy for Aerospace and gas turbine applications” in 2019-2020, guided by Prof. S. Kumaran.

- : **P. Harika (212219009)**, “Metallurgical, mechanical and electrochemical properties of Mg-3Ca-2Li stir-casted, solution treated and age-hardened alloy for aerospace, automobile and biomedical applications” in 2020-2021, guided by Prof. S. Kumaran.
- : **Ameya Joshi (212220003)**, “Electrical, mechanical and corrosion performance of microwave hybrid sintered powder metallurgical Cu-3Ti-(2,4) Ni-0.5Al (master alloy) electronic applications” in 2021-2022, guided by Prof. S. Kumaran.
- : **P. Varsa (212220019)**, “Effect of Boron/Nickel boride additions on the metallurgical, mechanical and electrochemical behavior of microwave processed P/M 316L stainless steels” in 2021-2022, guided by Prof. S. Kumaran.

Work Experience

- : Work experience as Asst. Professor in “**SRK Institute of Technology**”, Vijayawada from March 2013 to July 2014.
- : Work experience as Asst. Professor in “**Usha Rama Institute of Technology**”, Vijayawada from July 2017 to Dec 2017.
- : Teaching and research assistantship for “**Powder Metallurgy**” laboratory under **Prof. S. Kumaran** in Department of MME, NIT Trichy, in 2018-19.
- : Teaching assistantship for “**Corrosion Engineering**” laboratory under **Asso. Prof. N. Ramesh Babu**, in Department of MME, NIT Trichy, 2019-20.
- : Teaching assistantship for “**Metallography**” laboratory under **Prof. S. Kumaran**, in Department of MME, NIT Trichy, 2019-20.
- : Teaching and research assistantship for “**Particulate Processing**” laboratory under Prof. S. Kumaran in Department of MME, NIT Trichy, in 2020-21 and 2021-22.

Software Proficiency

- : X’Pert High Score Plus
- Origin 8.6 Pro 2018, COMSOL(6.0) MultiPhysics
- MAT Lab, Python for Engg.,
- CREO Parametric (CAE)
- EC-Lab (Electrochemical analysis)
- Image-J (Microstructural analysis)
- MountainsLab10 (Surface roughness analysis)
- Adobe Photoshop CS6
- MiniTab17(Statistical analysis).

Academic Achievements

- : Stood ZPH School (Kothapalli village) 3rd in SSC (2005)
- : Stood college 1st in class 12th with 90.8% (2007)

- : Participated in Robotics competition held at State Level Technical Fest, PRAJWAL '09' (2009)
- : Stood branch 2nd topper in NIT Durgapur in 2014-2016.

Sports & Games:

Hobbies:

- : Kabaddi, Chess, Cricket, Volleyball and Badminton
- : Reading newspapers, Journals and magazines,
- : Watching news & searching interested technical/research stuff in Google.

Languages known

: Telugu (Native speaker), Tamil, English (Proficient) and Hindi

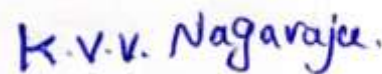
Declaration

I hereby declare that the above mentioned information is correct up to my knowledge and I bear the responsibility for the correctness of above mentioned particulars.

Date:

Signature

Place: Universidad de Chile, Santiago, Chile



(Dr. Veera Venkata Nagaraju)

Referees:

Dr. T. Srinivasa Rao (Research Supervisor)
Professor, HAG (Former Director NIT Warangal)

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