Personal details and date of CV

- Surname (Last Name): Ganvir
- First Name: Ashish
- Researcher ID: ORCID; Google Scholar; https://www.utu.fi/en/people/ashish-ganvir
- Date of CV: 23.11.2023

Degrees

- **Ph.D.** in Production Technology with specialization in liquid feedstock processing and high temperature surface coatings (**11.02.2019**); University West, Trollhättan, Sweden
- **MSc.** in Mechanical engineering (**18.02.2015**); University West, Trollhättan, Sweden
- **B. Tech.** in Materials & Metallurgical Engineering (**05.07.2013**); Indian Institute of Technology, Kanpur, India

Current employment

01.04.2021-current: **Assistant Professor (Tenure Track),** Department of Mechanical and Materials Engineering (MEMA), University of Turku (UTU), Finland;

- My current assignment is to build a new research and education in the field of digital manufacturing and surface engineering in the newly established MEMA department at UTU.
- I have already established a research group "Digital Manufacturing and Surface Engineering (DMS)" with over 10 researchers. Hired lab engineers, postdocs, PhD students and MSc thesis students. Acquired external grants as well as several research equipment.
- I consider myself in the early stage of my **academic career (Stage-II).**

Previous work experience

01.05.2021-01.08.2021: **Visiting professor,** Paul Scherrer Institute (PSI), Switzerland.

- The aim was to establish a new collaboration in material science and 3D-printing field.
- Learned about the mini laser 3D-printer developed at PSI for operando experiments.
- During the visit I wrote and won two beamtime grants funded by Switzerland government.

01.05.2020- 30.11.2020: Part time (40%) **postdoctoral researcher,** University West, Sweden.

- In addition to my full-time industrial job, during covid-19 pandemic furlough period (40%), I continued my research as a part time postdoc, researching liquid feedstock processing via high velocity air fuel spray & plasma spray for high temperature tribology application.
- Other duties: teaching MSc courses, writing grants, supervising MSc and PhD students etc.

18.11.2018-31.03.2021: **Process engineer, additive manufacturing** R&D, GKN Aerospace AB, Trollhättan, Sweden, on leave of absence from 1.4.2021 onwards.

- Responsible for materials and process development of additive manufacturing processes such as direct laser processing (DLP) and powder bed fusion as well as several surface engineering techniques such as thermal spray and laser cladding.
- Other responsibilities included leading internal technology development projects, national and EU funding acquisition, research project leadership and industrial PhD supervision.

01.06.2018-17.11.2018: Full time **postdoctoral researcher,** University West, Sweden.

- Conducted independent research on processing of liquid feedstock via plasma spray to enhance functionality of biomedical implants.
- Other duties: teaching MSc courses, writing grants, supervising MSc and PhD students etc.

01.03.2016-31.05.2016: **Industrial R&D internship,** Innovnano materials, Coimbra, Portugal.

- Responsible for manufacturing of liquid feedstocks using industrial set-up.

01.06.2016-31.08.2016: **Visiting Researcher,** Forschungszentrum Jülich, IEK-1, Jülich, Germany

- Responsible for conducting experiments on furnace heat treatment of thermal barrier coatings for understanding the phase and structural changes at high temperature.

Research funding and grants

Successful Grants:

- *Note 1:* In all the grants listed below, I served as the Principal Investigator (PI) or Co-Principal Investigator (Co-PI). In my capacity as a PI, I conceived the project idea, assembled the national/international consortium, and spearheaded the overall project. In the role of Co-PI, I originated and directed the work-package concept.
- *Note2:* the below funding description follows the following pattern: *Start date – End date of project:* **My role as a PI or Co-PI, funding at local, regional, national or EU level,** (Funder name, call or theme), **Project name, Budget,** brief description of the project.

1. *01.08.2023-31.07.2024:* **PI, Local,** (Academy of Finland, SUSMAT, Profi7), **MINIPRINT, 50 k EUR,** Seed fund individual grant to develop miniaturized laser printer for solid state energy devices.
2. *01.11.2022 – 31.12.2023:* **Co-PI, National** (Swiss light source, 2022 yearly beamtime call), **Multi-MatAM, *120 k EUR.** The project focuses on conducting operando synchrotron experiments of laser printed multi-materials.
3. *01.11.2022 – 31.12.2023:* **PI, National** (Swiss light source, 2022 yearly beamtime call), **InterfaceSOLBAT, *120 k EUR.** The project focuses on studying liquid feedstock laser processed solid-state-batteries with synchrotron.
4. *31.07.2022-01.02.2023:* **PI, National** (Swiss spallation neutron source, 2022 yearly beamtime call), **DEFAMe-2, *120 k EUR.** The project focuses on in-situ deformation of laser 3D-printed materials by neutron diffraction.
5. *01.06.2022-31.05.2025:* **PI, EU** (EU and Academy of Finland co-fund, M.ERANET 2021), **GREEN-BAT, 1.45 M EUR**. The project focuses on developing direct material processed solid-state-batteries for electrical vehicles.
6. *02.05.2022 – 31.12.2022:* **PI, National** (Swiss light source, 2022 yearly beamtime call), **LazerGlazeSOLBAT, *72 k EUR.** The project studies solid-solid interfaces in liquid feedstock processed solid-state-batteries with synchrotron.
7. *01.01.2022 – 31.07.2022:* **Co-PI, National** (Swiss spallation neutron source, 2022 yearly beamtime call), **DEFAMe, *72 k EUR.** The project studied in-situ deformation of 3D-printed dual phase steels by neutron diffraction.
8. *01.03.2021-31.03.2026:* **PI, Regional** (City of Turku, Tenure-track open call), **Digital Manufacturing Tenure-track, 600 k EUR,** Tenure-track individual grant" focusing on building research in digital manufacturing and surface engineering.
9. *01.09.2020-01.09-2023:* **PI, EU** (EU and VINNOVA co-fund, EUREKA UK-Sweden Network call 2020), **DEMAND-REPAIR, 1.8 M EUR**. The project focuses on developing smart digital manufacturing technologies for aerospace application.
10. *01.11.2019 – 31.12.2022:* **PI, National** (VINNOVA, Sweden, NFFP7 call 2019), **ADAPT-EBM, 0.8 M EUR.** The aim was to develop powder bed fusion 3D printing process for aerospace application.

- *Note 3: * An equivalent cost estimate for total allotted hours of beamtime at respective beamlines.*

Unsuccessful Grants:

Since my PhD graduation, I applied for several national and EU grants with 7 of those being unsuccessful. Among the 7 unsuccessful projects, totalling about 12 million EUR, I assumed the role of principal investigator or coordinator in 5 of them. In this capacity, I conceptualized the project idea, curated a consortium comprising 4 to 10 academic and industrial partners for each project, and drafted the applications. Remarkably, 4 out of the 7 unsuccessful projects received high rankings, with the failure to secure funding attributed solely to budget constraints.

Research output

Publications:

Published more than 50 scientific documents (e.g., journals, conferences, seminars, theses etc.). A detailed publication list can be found at https://www.utu.fi/en/people/ashish-ganvir.

Research supervision and leadership experience

2023 **Pre-examiner for PhD thesis** of Dr. Jukka Kolehmainen, Tampere University, Finland, embedded hard carbon sensors bring smart control over temperature and strain in sustainable development of machinery.

2022 - 2023 **Conference organizing vice-host**, 19th NOLAMP (Nordic Laser Advanced Materials Processing), 22-24 August 2023 at UTU, Finland, Participants over 100.

2022 **Opponent for PhD thesis defense** of Dr. Rahul Kumar, Tallinn University of Technology, Development of Solid Lubricated Composites for High-Temperature Tribological Applications

2021 – **Co-lead** of "digital manufacturing and surface engineering **(DMS)" research group** & newly designed 'digital manufacturing' **2-year MSc program** at UTU, Finland

2021 – **Principal supervisor** for 1 postdoc and 2 PhD students (expected graduation 2026-2027). A postdoc and a PhD work on liquid feedstock processing for solid-state-batteries & second PhD works on laser powder bed fusion of high temperature materials.

2021 – 2026 **Co-supervisor** for 1 postdoc and 4 PhD students (Research Topic areas: direct laser printing and selective laser printing) (expected graduation between 2024-2026)

2020 – 2024 **Industrial supervisor** for 1 PhD student (Area: digital manufacturing of titanium-based alloys for aerospace application) (expected graduation in 2024).

2018 – 2021 **Industrial R&D Project manager**, direct laser printing and powder bed fusion technology development for aeroengine repair application, GKN Aerospace AB, Sweden

2018 – 2023 **Academic research Project manager**, to date, I have led large consortium-based projects, including a national project in Sweden (0.8 MEUR), an EU project (1.8 MEUR), and I am currently leading another EU project (1.5 MEUR).

Teaching merits

1. *2021 –* Designed a new 'digital manufacturing' 2-year MSc program at UTU, Finland
2. *2021 –* Designed 2 new MSc courses & responsible for teaching them at UTU, Finland
3. *2020 –* Completed higher pedagogical training (13ECTS) for university lecturers.
4. *2018 – 2021* Guest lecturer in 3D-printing, at Chalmers University, Gothenburg, Sweden

Other key academic merits, such as

1. *2022 – 2026* **Member of Young Academy Finland YAF**, selected by the prestigious Finnish Academy of Sciences and Letters for four-year term, Finland
2. *2018 – 2021* A technical board member of the national competence centre, Centre for Additive Manufacture – Metal (CAM2), Sweden.
3. *2022 – 2023* A member of ASM International & Thermal Spray Society, USA.
4. *2020 –* Topic editor, for two, journals, Ceramics (MDPI) & Frontiers in Materials (Springer).
5. *2017 –* Scientific Evaluation, active member of a scientific judging committee for Journal of thermal spray technology to judge the annual best paper award.
6. *2016 –* Active reviewer of > 15 journals and reviewed > 100 scientific articles.