

## Personal information

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## Education

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**1996-2004 PhD.** in Materials Science & Engineering (Sharif University of Technology, Tehran-Iran)

**1993-1996 MSc.** in Materials Science & Engineering (Sharif University of Technology, Tehran-Iran)

**1988-1993 Bsc.** in Metallurgical Engineering (Shiraz University, Shiraz-Iran)

B Katanchi, N Choupani, J Khalil-Allafi, R Tavangar, M Baghani  
Engineering Fracture Mechanics 190, 273-287

## Publications

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1- R. Tavangar, S. Nategh and L. Weber, *Tensile behavior and ductility of 10 vol. pct. Saffil® short fiber Aluminum*, *Mat. Sci. Tech.* **20** (2004)1645-1648

2- L. Weber and R. Tavangar, A. Mortensen, *Ductility of Saffil™ short fibre reinforced metals*, *Scripta Materialia*, **53** (2005) 17-21

3- R. Tavangar, L. Weber, A. Mortensen, *Damage evolution in Saffil alumina short-fibre reinforced aluminium during tensile testing*, *Mat. Sci. Eng. A395* (2005), 27-34

4- L. Weber, R. Tavangar, *On the influence of active element content on the thermal conductivity and thermal expansion of Cu-X (X= Cr, B) diamond composites*, *Scripta Materialia*, **57** (2007) 988-991

5- R. Tavangar, J.M. Mulina, L. Weber, *Assessing predictive schemes for thermal conductivity against diamond-reinforced silver matrix composites at intermediate phase contrast*, *Scripta Materialia*, **56** (2007) 357-360

6- L. Weber and R. Tavangar, *Diamond-Based Metal Matrix Composites for Thermal Management Made by Liquid Metal Infiltration — Potential and Limits*, 1<sup>st</sup> International Conference On New Materials for Extreme Environment, *Advanced Materials Research*, **59** (2009) 111-115

- 7- C. Edtmaier, L. weber and R. Tavangar, *Surface Modification of Diamonds in Diamond/Al-Matrix Composite*, 1<sup>st</sup> International Conference On New Materials for Extreme Environment, *Advanced Materials Research*, **59** (2009) 125-130
- 8- K. A. Weidenmann, R. Tavangar, L. Weber, *Mechanical behaviour of diamond reinforced metals*, *Mat. Sci. Eng.* **A523**, (2009) 226-234
- 9- K. A. Weidenmann, R. Tavangar, L. Weber, *Rigidity of Diamond Reinforced Metals featuring high Particle Contents*, *Composites Science and Technology*, **69** (2009) 1660-1666
- 10- G. Roudini, R. Tavangar, L. Weber and A. Mortensen, *Influence of Reinforcement Contiguity on the Thermal Expansion of Alumina Particle Reinforced Aluminum Composites*, *Inter. J. Mater. Res.***101** (2010) 1113-1120
- 11- M. Vetterli, R. Tavangar, L. Weber and A. Kelly, *Influence of the Elastic Properties of the Phases on the Coefficient of Thermal Expansion of a Metal Matrix Composite*, *Scripta Materialia*, **64** (2011) 153-156
- 12- Tavangar R and Weber L, Silver-based diamond composites with highest thermal conductivity, *Emerging Materials Research*, **1** (2012) 67-74
- 13- B Katanchi, N Choupani, J Khalil-Allafi, R Tavangar, M Baghani, *Mixed-mode fracture of a superelastic NiTi alloy: Experimental and numerical investigations*, *Engineering Fracture Mechanics* **190**, (2018) 273-287
- 14- S Pourrahim, A Salem, S Salem, R Tavangar, *Application of solid waste of ductile cast iron industry for treatment of wastewater contaminated by reactive blue dye via appropriate nano-porous magnesium oxide*, *Environmental pollution* **256**, (2020) 113454
- 15- SAAH Milani, R Tavangar, M Azadbeh, *Effect of NOCOLOK® flux dry-off temperature on mechanical properties of brazed joint for automotive aluminum-based heat exchangers*, *Engineering Research Express* **2** (2), (2020) 025003
- 16- R Tavangar, HA Moghadam, A Khavandi, *Effect of Steel Fibers on Wear Mechanism of Semi-Metallic Brake Pad Composite*, *J. Sci. Technol. Compos* **7** (1), (2020) 791-799
- 17- SAA Hashemi Milani, R Tavangar, M Azadbeh, H Sadeghi-Nasab, *Effect of NOCOLOK® flux dry-off temperature on brazed joint strength of aluminum-based heat exchangers*, *Journal of Welding Science and Technology of Iran* **6** (1), (2020) 19-32
- 18- S Mahdavi, SR Allahkaram, A Heidarzadeh, R Tavangar, *Characteristics and properties of Co–Cr alloy coatings prepared by electrodeposition*, *Surface Engineering* **36** (9), (2020) 966-974

19- M Adelfar, R Tavangar, N Horandghadim, J Khalil-Allafi, Evaluating superelastic and shape memory effects using the photostress technique, *Materials Today Communications* 24, (2020) 101156

20- R Tavangar, HA Moghadam, A Khavandi, S Banaeifar, Comparison of dry sliding behavior and wear mechanism of low metallic and copper-free brake pads, *Tribology International* 151, (2020) 106416

21- A Firouzi, S Yazdani, R Tavangar, B Shakerifard, FK Mohammad, Austempering of PM HSS ASP2030 for improved fracture toughness, *Metallurgical Research & Technology* 119 (2), (2022) 211

22- HA Moghadam, S Banaeifar, R Tavangar, AR Khavandi, S Mahdavi, Resin-Based Copper-Free Brake Pads: A Right Selection of Potassium Titanate and Ceramic Fiber., *Iranian Journal of Materials Science & Engineering* 19 (3)

23- A Firouzi, S Yazdani, R Tavangar, B Shakerifard, F Khan MD, Fracture toughness evaluation of powder metallurgical asp2030 high-speed steels using flexural specimens and finite element method, *Strength of Materials* 54 (6), (2022) 1064-1081

24- F Akhtari, S Pour-Ali, R Tavangar, S Hejazi, Oxidation Behavior of GTD-111 Nickel Base Superalloy at 1000° C, *Journal of Metallurgical & Materials Engineering* 34 (1), (2023)

25- S Pour-Ali, R Tavangar, F Akhtari, S Hejazi, High-temperature oxidation behavior of GTD-111 Ni-based superalloy with an ultrafine-grained surface at 900 C, *Corrosion Science* 212, (2023) 110935

26- R Tavangar, H Ansari, M Nouri Kamari, Toward a different aspect of polymer matrix friction composite worn surface structures, *Advances in the Standards & Applied Sciences* 1 (2), (2023)

27- S Pour-Ali, R Tavangar, F Fakheri, S Hejazi, S Mohajernia, Influence of Near-Surface Severe Plastic Deformation on the Corrosion Behavior of GTD-111 Nickel Superalloy in Hydrofluoric Acid Solution, *Corrosion* 79 (6), (2023) 605-614

28- S Pour-Ali, R Tavangar, S Hejazi, Effect of micro-shot peening on microstructure and fluoride-induced corrosion performance of AISI 904L superaustenitic stainless steel, *Materials Today Communications* 36, (2023) 106682

29- S Partowafkan, S Pour-Ali, R Tavangar, S Hejazi, Thermal oxidation of Ti-6Al-4V ELI with an ultrafine-grained surface at 500° C: Oxidation kinetics, oxide characterization and corrosion performance, *Surface and Coatings Technology* 469, (2023) 129794

30- S Pour-Ali, R Tavangar, S Hejazi, Comprehensive assessment of some l-amino acids as eco-friendly corrosion inhibitors for mild steel in HCl: Insights from experimental and theoretical studies, *Journal of Physics and Chemistry of Solids* 181, (2023) 111550

31- S Nejadi, R Tavangar, S Pour-Ali, S Hejazi, Improved resistance to chloride-induced corrosion through the combined influence of surface nanocrystallization and thermal oxidation treatments on AISI 321 stainless steel, *Materials Chemistry and Physics* 309, (2024) 128404

32- S Pour-Ali, R Tavangar, S Hejazi, Influence of ultrafine surface grain size on the passive film chemistry and critical pitting temperature (CPT) in AISI 316L austenitic stainless steel, *Canadian Metallurgical Quarterly*, (2024) 1-13

33- H Namdar-Asl, F Fakheri, S Pour-Ali, R Tavangar, S Hejazi, Synthesis and Corrosion Inhibition Study of 1-Aminobenzotriazole for Mild Steel in HCl Solution: Electrochemical, Surface Analysis, and Theoretical Investigations, *Progress in Color, Colorants and Coatings* 17 (1), (2024) 61-74

34- E Akbarzadeh, K Yurtışık, C Hakan Gür, T Saeid, R Tavangar, - Influence of Shielding Gas on the Microstructure and Mechanical Properties of Duplex Stainless Steel in Wire Arc Additive Manufacturing, *Metals and Materials International*, (2024) 1-20

35- S Pour-Ali, S Mahdavi, S Moradi, R Tavangar, Effect of high-energy shot peening on the corrosion behavior and chloride threshold concentration of AISI 316L stainless steel rebar in simulated concrete pore solution, *Journal of Materials Research and Technology*, (2024)

36- S Nejadi, S Pour-Ali, R Tavangar, Enhancing AISI 321 stainless steel's high-temperature oxidation resistance at 600° C through surface nanocrystallization and pre-oxidation synergy, *Surface and Coatings Technology*, (2024) 130747

37- R Palmeh, S Pour-Ali, R Tavangar, MF Khan, Correlation between the micro-shot peening coverage and surface microstructural evolution and fluoride-induced corrosion behavior in Monel 400 alloy, *Materials Today Communications* 39, (2024) 108625

38- S Pour-Ali, R Tavangar, H Namdar-Asl, N Esfandiari, E Khorashadizade, Enhanced photoelectrochemical water splitting via hydrogenated TiO<sub>2</sub> nanotubes modified with Cu/CuO species, *Journal of Photochemistry and Photobiology A: Chemistry* 452, (2024) 115586

## Presentations

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1- R. Tavangar and A. Karimi Taheri, *Determination of Optimum Flash in Closed- Die Forging With UBET Using Computer*, 2<sup>nd</sup> Production & Manufacturing Engineering Conference (PMEC), Dec.1995, Tehran, Iran

2- R. Tavangar and A. Karimi Taheri, *Prediction of Optimum Flash Dimensions in Axisymmetric Closed-Die Forging*, 4<sup>th</sup> Annual Mechanical Engineering Conference of ISME, and 2<sup>nd</sup> International mechanical Engineering Conference. May.1996, Shiraz, Iran.

3- R. Tavangar, M. Vetterli, L. Weber, *Thermal Expansion of Metal Matrix Composites of highly Loaded with Low Expansion Phase: The Influence of Elastic Property Mismatch*, EUROMAT. 2007, 10-13 September, Nuremberg, Germany

4- G. Roudini, R. Tavangar, L. Weber, A. Mortensen, *The Effect of Particle Contiguity on the Thermal Expansion of Al/Al<sub>2</sub>O<sub>3</sub> Composites*, Euromat. 2007, 10-13 September, Nuremberg, Germany

5- L. Weber, R. Tavangar, *Diamond-based Metal Matrix Composites for Thermal Management made by Liquid Metal Infiltration—Potential and Limits*, 1st International Conference on New Materials for Extreme Environments 2-4 June, 2008, San Sebastián, Spain

6- R. Tavangar, L. Weber, *Physical Properties of Diamond-based Metal Matrix Composites: The influence of thermal cycling*, EUROMAT 2009, 7-10 September: SECC, Glasgow, UK

## Patents

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1- S. Hasanovic, A. Mortensen, L. Weber, R. Tavangar, *Composite Material Comprising a Precious Metal, Manufacturing Process and Use of Such Material*, US Patent-US2013/0344316 A1, DEC 26, 2013,

2- S. Hasanovic, A. Mortensen, L. Weber, R. Tavangar, *Materiau composite comprenant un metal precieux, procede de fabrication et utilisation d'un tel materiau*, European Patent-EP2683841 A1, JAN 15, 2014,

## Professional experience

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**Since 2017: *Materials consultant*** at Ettehad Lent Pishro Sanat. A leading-edge company in research and development of Copper-Free friction materials for auto-brake pads. I have been conducting a project to design and develop friction materials based on Copper-Free formulation.

**Since 2014: *Assistant Professor*** at Sahand University of Technology, Materials Engineering Department.

**2012-2014: *Laboratory Manager*** at Ettehad Lent Pishro Sanat. A recently established company with advanced technology in producing auto brake pads. I contribute to design, establish and imply various tests on the products.

**2010-2012: *Materials Consultant*** in 2 companies (Lola Khodro and Ettehad Motor) producing suspension, heating, windshield wiper and steering systems for the largest two Iranian automobile companies Iran-Khodro and SAIPA.

**2005-2010: *Post doctoral associate*** at Ecole Polytechnique Fédérale de Lausanne (EPFL) in the Framework of a european project ExtreMat  
“This research activity is motivated by the need for highly efficient heat sink materials having a tailored coefficient of thermal expansion and a high thermal conductivity. To this end, we investigated the parameters that allow successfully manufacturing of metals (e.g. Cu, Al, Mg and Ag and their alloys) containing large volume fractions of synthetic diamond particles.”

## Professional experience (continued)

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**2004-2005: *Laboratory manager*** in Ring Khodro Pars company (RKP) producing gray cast iron engine piston rings

**2003-2004: *Lecturer*** at Sahand University (Tabriz), the courses given; *Materials Selection, Metal Forming, Scientific and Technical Writing*

**2002-2003: *Lecturer*** at Azad University in Tehran, the courses given; *Heat Treatment, Phase Transformation, Physical Metallurgy*

**1993-2005: *Materials consultant*** in 3 companies (Lola Khodro, Ettehad Motor and Bonyan Sanat Aval) producing suspension, heating, windshield wiper and steering system for the largest Iranian car company Iran-Khodro

## Technical Skills

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### Materials Characterization Techniques:

Scanning (SEM) and Transmission Electron Microscopy (TEM), Optical Microscopy, X-ray Diffraction, Optical Emission Spectroscopy, C-S measurement through combustion technique,

### Mechanical Testing:

Tensile, Compression, Fatigue, Hardness, Physical Property Measurement

### Quality Management Systems:

Familiar with quality management standards like ISO 9002 and 9001 and ISO/TS 16949, internal auditing, Uncertainty, Measurements System Analysis (MSA), Statistical Process Analysis (SPC), Process Failure Mode Effects Analysis (PFMEA), Poka Yoke

## Language

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**Persian:** Native

**English:** Fluent

**French:** Speaking fluent (writing up to B2 level of European Language system)

## Computer Skills

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Microsoft Office, Microsoft Project, Microsoft Visio, SolidWorks, Labview (programming and data acquisition), Ansys Workbench, Xpert HighScore, Minitab

## Courses given

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### 1- **Sahand University of Technology**

- *Soldering and Brazing*
- *Creep in Metals and Materials*
- *Composite Materials*
- *Uncertainty Calculations*
- *Mechanical Behavior of materials*
- *Advanced materials*
- *Selection of Materials*
- *Craft of Scientific writing*

### 2- **Sharif University of Technology**

- *Phase Transformation*
- *Heat Treatment*
- *Heat Treatment Lab course*

### 3- **Noushervany University of Technology**

- *Die Design*
- *Squeeze Casting and Forging Die*

4- **Azad University- Tehran (Science and Research Branch)**

- *Selection Of Materials*
- *Creep*
- *Mechanical Metallurgy*

5- **Azad University- Abhar**

- *Metallic Materials*
- *Material Science*
- *Physical Metallurgy*

6- **Mega Motor Company**

- *Heat Treatment*

7- **Iran Khodro Axle Manufacturing**

- *Heat Treatment*

## **Supplementary Information**

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A part of my work at EPFL devoted to give different Laboratory courses;

- *Thermal Conductivity Measurement*
- *Plastic Inhomogeneity and Anisotropy in Metals*
- *Superplasticity*
- *Shape Memory Effect*
- *Tensile Testing*

References on demand