Alireza Akbari

Professor

College: Faculty of Material Engineering


## Research Interests

Surface Engineering: Superhard Nanocomposites, Nanocomposite Coatings With ED Process, Thin Film Deposition via PVD, CVD Processes, Surface Engineering via Plasma and  High-Temperature Gas Nitriding Processes, Deposition of Thermal Barrier Coatings via APS And EPD Processes

Structural and Residual Stresses Analysis: By X-Ray Diffraction

Mechanical Properties of Advanced Materials and Alloys: Mechanical Properties of Bulk and Nanostructured Materials, High Nitrogen Steels, Mechanical Alloying, and High Entropy Alloys.

## Research Experi*ences*

Thin Film Deposition: Reactive Ion Beam Sputtering and Reactive magnetron sputtering

Plasma Nitriding and High-Temperature Gas Nitriding: stainless steels, titanium alloys, tool steels, and high-strength steels

X-Ray Diffraction: Phase composition, Structural Analysis, Texture Analysis, and Residual Stress Analysis

Surface Chemical Composition Analysis: EDS, XPS, RBS, GDOES and Simulation of Results

Tribology: Pin-on-disk Wear testing, Three-Dimensional Surface Profilometry

Mechanical properties: Tensile, Compression, Impact, Hardness, Toughness, Wear, Scratch, And Nanoindentation Testing

Mechanical alloying:

Employment Information

| Faculty/Department | Position/Rank | Employment Type | Cooperation Type | Grade |
|---|---|---|---|---|
| Faculty of Materials Engineering | Academic Staff | Tenured | Full Time | |

## Work Experience

### Vice-Chancellor of the Faculty of Materials Engineering (2008-2009)

### Dean of the Faculty of Materials Engineering (2009-2014)

## Awards

European materials research society (E-MRS) Graduate Student (Young Scientist) Award, E-MRS Spring Meeting 2005, 31 May-3 Jun Strasbourg, France.

## Subjects Taught

Undergarduate:

Mechanical Properies Material (Fracure, Fatigue and Creep)

Undergarduate:

Fracture Mechanics

Theory of Dislocation

Mechanical Properies of Nanostructured Material

Thin Films

Nanothermodynamics

## Course Topics

Mechanical Properies of Material

Surface Engineering

## Journal Membership

(Advanced Materials and Structures (AMS

## Papers in Journals

1. Roya Farjam, Alireza Akbari, Mahmoud Nili Ahmadabadi, Hassan Shirazi,Co50Cr20Ni20Fe5Mn5 high entropy alloy: Overcoming the strength-ductility trade-off of Cantor alloy,Journal of Alloys and Compounds,Vol. 976,pp. 173000,2023,JCR.
2. Mina Noroozpour, Alireza Akbari,YSZ–Al2O3 thermal barrier nanocomposites coatings: Electrophoretic deposition and characterization,International Journal of Applied Ceramic Technology,pp. 1-12,2023,JCR.
3. Ramazan Sobhanverdi, Alireza Akbari,In-situ synthesis and characterization of Cu/NbC, Cu/NbC-W C, and Cu/W C nanocomposites via mechanical alloying,Journal of Alloys and Compounds,pp. 171014,2023,JCR.
4. Malihe Mohammadi, Alireza Akbari, Fernando Warchomicka, Luc Pichon,Depth profiling characterization of the nitride layers on gas nitrided commercially pure titanium,Materials Characterization,Vol. 181,pp. 111453,2021,JCR.
5. T.N. Chakherlou, P. Shahriary, A. Akbari,Experimental and numerical investigation on the fretting fatigue behavior of cold expanded Al-alloy 2024-T3 plates,Engineering Failure Analysis,Vol. 123,pp. 105324,2021,JCR.
6. M. Salari Mehr, A. Akbari, E. Damerchi,Electrodeposited Ni-B/SiC micro- and nano-composite coatings: A comparative study,Journal of Alloys and Compounds,Vol. 782,pp. 477-487,2019,JCR.
7. Mohammad Mirak, Alireza Akbari,Microstructural characterization of electrodeposited and heat-treated Ni-B coatings,Surface and Coatings Technology,Vol. 349,pp. 442–451,2018,JCR.
8. M. Kavanlouie, A Akbari,Electrophoretic deposition of TiN coatings, Journal of American Ceramic Society,Journal of American Ceramic Society,Vol. 101,pp. 3288–3298,2018,JCR.
9. Roghayeh Mohammadzadeh, Alireza Akbari, Flemming B. Grumsen, Marcel A. J. Somers,Discontinuous precipitation in a nickel-free high nitrogen austenitic stainless steel on solution nitriding,, Philosophical Magazine,Vol. 97,pp. 2795–2814,2017,JCR.
10. Roghayeh Mohammadzadeh, Alireza Akbari, Mina Mohammadzadeh,Impact Toughness Properties of Nickel- and Manganese-Free High Nitrogen Austenitic Stainless Steels,Metallurgical and Materials Transactions A,Vol. 47,pp. 6032–6041,2016,JCR.
11. Ramazan Sobhanverdi, Alireza Akbari,Porosity and microstructural features of plasma sprayed Yttria stabilized Zirconia thermal barrier coatings,Ceramics International,Vol. 41,pp. 14517–14528,2015,JCR.
12. Alireza Akbari, Roghayeh Mohammadzadeh,Effect of Grain Refinement on the Mechanical Properties of a Nickel- and Manganese-Free High Nitrogen Austenitic Stainless Steel,Metallurgical and Materials Transactions A,Vol. 46,pp. 1570-1579,2015,JCR.