Sedigheh Rashidi

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OBJECTIVE

Seeking an opportunity to utilize my passion and skills in material science and the experiences of working with teams in various industries (data storage, energy, & automotive) to contribute to development and selection of advanced materials.

EXECUTIVE SUMMARY

- Subject matter expert in the characterization and modeling of high-temperature corrosion/oxidation of high-Performance superalloys and ceramics with publications and conference presentations.
- Experienced materials scientist with accomplishments and publications on synthesis and characterization of magnetic nanomaterials.
- Strong research professional, conducted research studies on additive manufacturing (3D printing), coating and aluminizing, nanoparticles and nanocomposites, and superalloys.
- Industrial research and development experience through working with Western Digital, LG Fuel Cells, & IKCO.
- Conducted collaboration studies on high temperature oxidation of coatings and super alloys with Pacific Northwest National Laboratory and Oak Ridge National Laboratory.

TECHNICAL SKILLS

- FE-SEM, EDS, FIB, STEM, HR-TEM, EBSD
- Vicker's micro-indenter
- X-Ray CT
- FTIR, XRD, TGA
- IFM, Optical Microscopy
- Potentiostat
- PANalytical X'Pert HighScore, Sigma Plot, Origin, DOE (DX-7), Rietveld Refinement Analysis MAUD, Minitab Gage R&R
- COMSOL Multiphysics
- M4D-CCI/ChemApp
- PANDAT
- JMat Pro
- Image Analyzer and MIP

EDUCATION

Ph.D., Chemical, Biomolecular, and Corrosion Engineering, The University of Akron, Ohio, USA 2017 – 2020
Dissertation: "Effect of advanced manufacturing processes on the high temperature oxidation (HTO) behavior of super-alloys"

M.Sc., Materials Selection and Engineering, University of Tehran, Tehran, Iran 2011 – 2014
Thesis: "Characterization of cobalt ferrite/polymer nanocomposite synthesized by mechanical alloying route"

B.Sc., Materials Science and Engineering, Sharif University of Technology, Tehran, Iran 2006 – 2011
Thesis: "Investigation of antibacterial effect of nanosized silver colloidal solution on Thiobacillus and sulfate-reducing bacteria"

PROFESSIONAL EXPERIENCE

North Carolina State University, Raleigh, North Carolina Fall 2020
Visiting Student

- Conducted TEM characterization of IN625 super alloys for HTO studies at 850 °C and 1000 °C.

Western Digital Corporation, San Jose, California Summer 2020
Intern

- Studied high temperature oxidation in Heat Assisted Magnetic Recording (HAMR) writer heads using COMSOL Multiphysics.
- Worked with design, reliability, wafer fabrication, and backend characterization teams to deliver magnetic writer heads.
- Experienced working with integration of various modules (CMP, Metrology, ion mill, wet & dry etch) to deliver final product.

The University of Akron, Akron, Ohio 2017 – Present
Research Assistant

- Conducted research on high temperature oxidation (HTO) behavior of Fe &Ni based super alloys with advanced manufacturing processes (additive manufacturing (AM), heat isostatic pressing (HIP) and reactive air aluminizing (RAA).
- Collaborated with LG Fuel Cells Inc. on evaluation of adv. manufacturing processes on HTO of superalloys.
- Lead a study on HTO of RAA alloys in collaboration with Pacific Northwest National Laboratory (PNNL).
- Published papers in the prestigious journals of Corrosion Science and JOM. Presented at TMS, NACE, Gordon, MS&T.

- Mentored and trained undergraduate students on HTO testing and characterization of fuel cell material specimens.

Teaching Assistant (for "Fundamental of Dry Corrosion" and "Heat Exchange Laboratory")

University of Tehran, Tehran, Iran 2011 – 2014

Research Assistant

- Conducted research on synthesis and characterization of magnetic nanoparticles and magnetic/polymer nanocomposites for biomedical applications. Published three journal papers and presented at three conferences.

Teaching Assistant (for Physical Metallurgy)

Iran Khodro Company (IKCO), Tehran, Iran Summer 2009

Intern

- Designed display module bracket of Tire Pressure Monitoring System (TPMS)"

SOFT SKILLS

- High level problem solving and comfortable with doing multiple projects at the same time
- Strong communication skills
- Strong teamwork and leadership skills

SELECTED HONORS

- **Session Chair** in Advance in Surface Engineering-Session I, TMS 2019 conference
- **Reviewer** of Journal of the Minerals, Metals, and Materials

SELECTED PUBLICATIONS (AVAILABLE on GOOGLE SCHOLAR)

- **S. Rashidi**, J. P. Choi, J. W. Strevenson, A. Pandey, R. K. Gupta, "*High temperature oxidation behavior of aluminized Haynes 230*", Corrosion Science, 174 (2020) 108835.
- **S. Rashidi**, A. Ataie, "*Structural and magnetic characteristics of PVA/$CoFe_2O_4$ nanocomposites prepared via mechanical alloying method*", Materials Research Bulletin, 80 (2016) 321-328.