Ali Akbari-Fakhrabadi
Researcher ID: G-6987-2016
Scopus Author ID: 35736857300
aliakbarif@uchile.cl

ACADEMIC DEGREES

- **Ph.D.** in Materials Science and Engineering
  University of Concepcion, Concepcion – Chile.

- **M.Sc.** in Materials Engineering (Materials Selection and Characterizations)
  University of Tehran, Tehran–Iran

- **B.Sc.** in Materials Engineering (Industrial Metallurgy)
  Islamic Azad University of Yazd, Yazd–Iran

RESEARCH FIELDS

- Materials Science and Engineering
- Advanced Materials for Electronic and Energy Conversion Devices
- Structure and Mechanical properties of Materials

TEACHING

- Department of Mechanical Engineering at University of Chile, Santiago – Chile.
  Associate Professor (Jun. 2014 - present)
  Taught Courses:
  -Mechanical behavior of Materials
  -Engineering Materials
  -Advanced Materials for Energy Conversion Solid Cells

- Department of Materials Engineering at the Islamic Azad University of Sirjan, Sirjan – Iran.
  Lecturer (Sep. 2005 - Feb. 2011) Full time.
  Taught Courses:
  -Materials Characterizations and X-Ray Diffraction
  -Physical Metallurgy
  -Mechanical Behavior of Materials
  -Phase Transformations in Metals and alloys.

HONORS, AWARDS AND GRANTS:

- Distinguished Researcher in University of Chile – Chile, 2017.
- Distinguished Researcher in Islamic Azad University of Sirjan – Iran, 2009.
- UdeC Doctoral Fellowship (Mar. 2011-Jun. 2013).

ACADEMIC ADMINISTRATION

1) Coordinator od Doctoral program of Mechanical Engineering, Mechanical Engineering Department, University of Chile, Santiago – Chile. (Mar. 2021-present)
2) Council Member of Mechanical Engineering Department, University of Chile, Santiago – Chile. (Jul. 2016 – 2018 and Jul. 2020-present)
3) Research Manager and Member of Research Council of Islamic Azad University of Sirjan, Sirjan – Iran. (Dec. 2006 - Jan. 2008)

PUBLICATIONS

1) H. Maleki-Ghaleh, M. Hossein Siadati, A. Fallah, Y. Omidi, M. Kavanlouei, J. Barar, A. Akbari-Fakhrabadi, K. Adibkia, Beygi-Khosrowshahi Y., Synchrotron SAXS/WAXS and TEM studies of zinc doped natural hydroxyapatite nanoparticles and their evaluation on osteogenic differentiation of human mesenchymal stem cells, Materials Chemistry and Physics, 276, 2022, 125346.
2) T. Arun, T. Kavinkumar, R. Udayabhaskar, R. Kiruthiga, M.J. Morel, R. Aepuru, N. Dineshbabu, K. Ravichandran, A. Akbari-Fakhrabadi, R.V. Mangalaraja, NiFe2O4 nanospheres with size-tunable magnetic and electrochemical properties for superior supercapacitor electrode performance, Electrochimica Acta, 399, 2021, 139346.
3) H. Maleki-Ghaleh, M. Hossein Siadati, A. Fallah, A. Zarrabi, F. Afghah, B. Koc, E. Dalir Abdolahinia, Y. Omidi, J. Barar, A. Akbari-Fakhrabadi, Y. Beygi-Khosrowshahi, K. Adibkia, Effect of zinc-doped hydroxyapatite/graphene nanocomposite on the physicochemical properties and osteogenesis differentiation of 3D-printed polycaprolactone scaffolds for bone tissue engineering, Chemical Engineering Journal, 42615, 2021, 131321.
4) M. Muneeswaran, A. Akbari-Fakhrabadi, M.A. Gracia-Pinilla, J.C. Denardin, N.V. Giridharan, Realization of structural transformation for the enhancement of magnetic and magneto capacitance effect in BiFeO3–CoFe2O4 ceramics for energy storage application, Scientific Reports, 11, 1, 2021, 2265.
5) T. Jayaramudu, R.D. Pyarasani, A. Akbari-Fakhrabadi, D.J. Abril-Milan, Amalraj, Synthesis of Gum Acacia Capped Polyaniline-Based Nanocomposite Hydrogel for the Removal of Methylene Blue Dye, Journal of Polymers and the Environment, 29, 8, 2021, 2447 – 2462.
6) T. Jayaramudu, K. Varaprasad, R.D. Pyarasani, K.K. Reddy, A. Akbari-Fakhrabadi, V. Carrasco-Sanchez, J. Amalraj, Hydroxypropyl methylcellulose-copper nanoparticle and its nanocomposite hydrogel films for antibacterial application, Carbohydrate PolymersVolume, 254, 2021, 117302.
7) T. Prabhakaran, R.V. Mangalaraja, F. Beron, J.A. Jimenez, J.C. Denardin, T. Arun, A. Akbari-Fakhrabadi, Thermally Reduced Soft Magnetic CuFe Nanoparticles for High-Performance Electrical Devices, IEEE Transactions on Magnetics, 57, 2, 2021, 9277593.
8) T. Arun, A. Mohanty, A. Rosenkranz, B. Wang, J. Yu,M.J. Morel, R. Udayabhaskar, S.A. Hevia, A. Akbari-Fakhrabadi, R.V. Mangalaraja,A. Ramadoss, Role of electrolytes on the electrochemical characteristics of Fe3O4/MXene/RGO composites for supercapacitor applications, Electrochimica Acta, 367, 2021, 137473.
9) C. Karthikeyan, K. Varaprasad, A. Akbari-Fakhrabadi, A.S.H. Hameed, R. Sadiku, Biomolecule chitosan, curcumin and ZnO-based antibacterial nanomaterial, via a one-pot process, Carbohydrate Polymers, 2020, 249, 116825.
10) B. Arnauda, A. Akbari-Fakhrabadi, N. Orlovskaya, V. Meruane, W. Araki, Room temperature ferroelastic creep behavior of porous $(La_{0.6}Sr_{0.4})_{0.95}CO_{0.2}Fe_{0.8}O_{3-\delta}$ Processes, 2020, 8(11), 1–10, 1346.
11) T. Arun, T. Kavin Kumar, R. Udayabhaskar, M.J. Morel, G. Rajesh, R.V. Mangalaraja, A. Akbari-Fakhrabadi, Size dependent magnetic and capacitive performance of MnFe2O4 magnetic nanoparticles, Materials Letters, 2020, 276, 128240.
12) P. Thandapani, M. Ramalinga Viswanathan, M. Vinícius-Araújo, A.F. Bakuzis, F. Béron, A. Thirumurugan, J.C. Denardin, J.A. Jiménez, A. Akbari-Fakhrabadi, Single-phase and binary phase nanogranular ferrites for magnetic hyperthermia application, Journal of the American Ceramic Society, 2020, 103(9), 5086–5097.

13) M. Muneeswaran, A. Akbari-Fakhrabadi, M.A. Gracia-Pinilla, J.C. Denardin, Structural, electrical, ferroelastic behavior, and multiferroic properties of $BiFeO_3$, Journal of Materials Science: Materials in Electronics, 2020, 31(16), 13141–13149.
14) T. Jayaramudu, K. Varaprasad, K.K. Reddy, R.D. Pyarasani, A. Akbari-Fakhrabadi, J. Amalraj, Chitosan-Pluronic based Cu Nanocomposite Hydrogels for Prototype Antimicrobial Applications, International Journal of Biological Macromolecules, 2020, 143, 825–832.
15) D. Savariraj, V. Vinoth, R.V. Mangalaraja, T. Arun, D. Contreras, A. Akbari-Fakhrabadi, H. Valdés, F. Banat, "Microwave-Assisted Synthesis of Localized Surface Plasmon Resonance Enhanced Two Dimensional (2D) Bismuth Selenide (Bi_2Se_3) Layers for Non-Enzymatic Glucose Sensing", Journal of Electroanalytical Chemistry, 2020, 856, 113629.
16) M. Jamshidijam, R.V. Mangalaraja, A. Akbari-Fakhrabadi, J. Usuba, T. Pandiyarajan, R. Udayabhaskar, N. Escalona, S.H. Chan "Evaluation of microstructural and electrical properties of tubular Ni-$Ce_{0.8}Sm_{0.2}O_{1.9}$ composite anode for SOFC", Materials Research Express, 6, 2019, 115536.
17) T. Arun, S.K. Verma, Pritam K. Panda, R.J. Joseyphus, E. Jha, A. Akbari-Fakhrabadi, P. Sengupta, D.K. Raya, V.S. Benitha, K. Jeyasubramanyan, P.V. Satyam, "Facile synthesized novel hybrid graphene oxide/cobalt ferrite magnetic nanoparticles based surface coating material inhibit bacterial secretion pathway for antibacterial effect", Materials Science and Engineering: C, 104, 109932, 2019.
18) M. Muneeswaran, J.W. Jang, J.H. Jeong, A. Akbari-Fakhrabadi, N.V. Giridharan, "Effect of dopant-induced defects on structural, electrical, and enhanced ferromagnetism and magnetoelectric properties of Dy and Sr co-doped $BiFeO_3$", Journal of Materials Science: Materials in Electronics, 2019.
19) T. Arun, T. K. Kumar, R. Udayabhaskar, and R. V Mangalaraja, A. Akbari-Fakhrabadi "Nano hexagonal Co_3O_4 platelets for supercapacitor applications" Materials Research Express, 6, 0850b1, 2019.
20) S. Farhang-Sahlevani, T. Pandiyarajan, F. Sanhueza, A. Akbari-Fakhrabadi, H.D. Mansilla, D. Contreras, R.V. Mangalaraja, M.A. Gracia-Pinilla, "A facile hydrothermal synthesis of CeO_2 nanocubes decorated ZnO nanostructures: optical and enhanced photocatalytic properties," Journal of Materials Science: Materials in Electronics, 2019.
21) A. Thirumurugan, K. Prabakaran, R. Udayabhaskar, R.V. Mangalaraja, A. Akbari-Fakhrabadi, Carbon decorated octahedral shaped Fe_3O_4 and α-Fe_2O_3 magnetic hybrid nanomaterials for next generation supercapacitor applications, Applied Surface Science, 485, 2019, 147-157.
22) T. Jayaramudu, K. Varaprasad, R. D. Pyarasani, K. K. Reddy, K. D. Kumar, A. Akbari-Fakhrabadi, R.V. Mangalaraja, J. Amalraj, "Chitosan capped copper oxide/copper nanoparticles encapsulated microbial resistant nanocomposite films", International Journal of Biological Macromolecules, 128, 2019, 499-508**.**
23) A. Akbari-Fakhrabadi, O. Rodriguez, R. Rojas, V. Meruane, M.H. Pishahang, "Ferroelastic behavior of $LaCoO_3$: A comparison of impression and compression techniques", Journal of European Ceramic Society, 2019, 39, 1569-1576.
24) B. Karthikeyan, S. Hariharan, A. Sasidharan, V. Gayathri, T. Arun, A. Akbari-Fakhrabadi, C. Madhumitha, "Optical, vibrational and fluorescence recombination pathway properties of nano SiO_2 -PVA composite films", Optical Materials, 90, 2019, 139-144.

25) M. Muneeswaran, J-W. Jang, J.H. Jeong, A. Akbari-Fakhrabadi, N.V. Giridharan, "Effect of dopant-induced defects on structural, electrical, and enhanced ferromagnetism and magnetoelectric properties of Dy and Sr co-doped $BiFeO_3$", Journal of Materials Science: Materials in Electronics, 2019, 30, 7359–7366.

26) I. Restrepo, C. Medina, V. Meruane, A. Akbari-Fakhrabadi, P. Flores and S. Rodríguez-Llamazares, "The effect of molecular weight and hydrolysis degree of poly(vinyl alcohol)(PVA) on the thermal and mechanical properties of poly(lactic acid)/PVA blends", Polimeros-Ciencia e Tecnologia, 28. 2018, 169-177.

27) A. Akbari-Fakhrabadi, E.G. Toledo, J.I. Canales, V. Meruane, S.H. Chan, M.A. Gracia-Pinilla, "Effect of Sr^{2+} and Ba^{2+} doping on structural stability and mechanical properties of $La_2NiO_{4+\delta}$", Ceramics International, 2018, 44, 10551-10557.

28) S. Rajendran, T.K.A. Hoang, R. Boukherroub, D.E.D. Droguett, F. Gracia, M.A.G .Pinilla, A. Akbari-Fakhrabadi, V.K. Gupta, "Hydrogen adsorption properties of Ag decorated TiO2 nanomaterials", International Journal of Hydrogen Energy, 43, 2018, 2861-8.

29) J.U. Valdebenito, A. Akbari-Fakhrabadi, M.R. Viswanathan, "Effect of flash sintering on microstructure of $Ce_{0.9}Gd_{0.1}O_{1.95}$ electrolyte fabricated by tape-casting", Materials Letters, 209, 2017, 291-294.

30) M. Jamshidijam, P. Thangaraj, A. Akbari-Fakhrabadi, M.A.N. Galeano, J.B. Usuba, R.V. Mangalaraja, "Influence of rare earth (RE=Nd, Y, Pr and Er) doping on the microstructural and optical properties of ceria nanostructures", Ceramics International, 43, 2017 5216-5222.

31) A. Akbari-Fakhrabadi, V. Meruane, M. Jamshidijam, Miguel A. Gracia, R. Garcia, M. Orellana, "Structural and mechanical properties of $La_{0.6}Sr_{0.4}M_{0.1}Fe_{0.9}O_{3-d}$ (M: Co, Ni and Cu) perovskites" Ceramic International, 43, 2017, 2089-2094.

32) A. Akbari-Fakhrabadi, V. Meruane, M. Jamshidijam, R.V. Mangalaraja, Miguel A. Gracia, "Effect of rare earth dopants on structural and mechanical properties of nanoceria synthesized by combustion method" Materials Science and Engineering A, 649, 2016, 168-173.

33) A. Akbari-Fakhrabadi, R. Saravanan, M. Jamshidijam, R. V. Mangalaraja, M. A. Gracia, "Preparation of nanosized yttrium doped CeO_2 catalyst used for photocatalytic application", Journal of Saudi Chemical Society, 19, 2015, 505-510.

34) A. Akbari-Fakhrabadi, P. Sathishkumar, K. Ramam, R. Palma, R.V. Mangalaraja, "Low frequency ultrasound assisted synthesis of $La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-\delta}$ (LSCF) perovskite nanostructures", Powder Technology, 276, 2015, 200-203.

35) A. Akbari-Fakhrabadi, R.V. Mangalaraja, M. Jamshidijam, Miguel A. Gracia, S.H. Chan, "Structural studies of gadolinium doped ceria nanopowders prepared by combustion synthesis", Materials letters, 125, 2014, 19-24.

36) M. Jamshidijam, R.V. Mangalaraja, A. Akbari-Fakhrabadi, S. Ananthakumar, S.H. Chan, "Effect of rare earth dopants on structural characteristics of nano ceria synthesized by combustion method", Powder Technology, 253, 2014, 304-310.

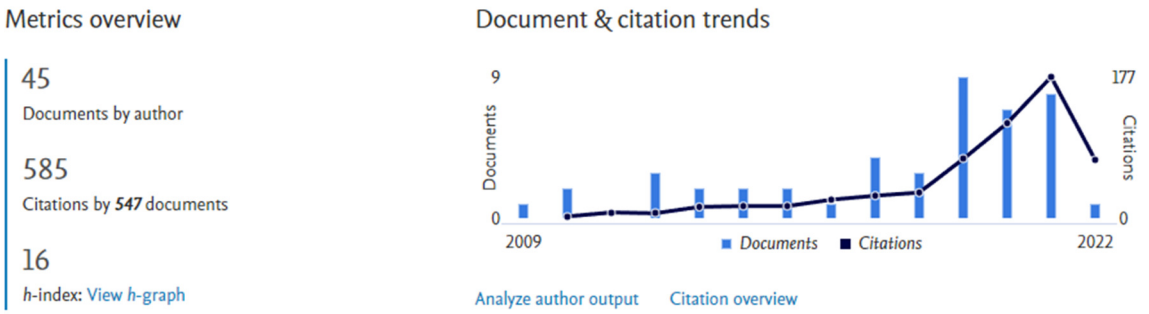
37) A. Akbari-Fakhrabadi, R.V. Mangalaraja, M. Jamshidijam, S. Ananthakumar, S. H. Chan, "Mechanical properties of Gd-CeO_2 electrolyte for SOFC prepared by aqueous tape casting",Fuel cells, 13, No. 5, 2013, 682-688.

38) M. Jamshidijam, **A. Akbari-Fakhrabadi, S.M. Masoudpanah, G.H. Hasani, R.V. Mangalaraja, "Wear behavior of multi-walled carbon nanotube/AZ31 composite processed by friction stir processing", Tribology Transactions, 56, 2013, 827-832.
39) A. Akbari-Fakhrabadi, R.V. Mangalaraja, Felipe A. Sanhueza, Ricardo E. Avila, S. Ananthakumar, S.H. Chan, "Nanostructured Gd-CeO_2 electrolyte for solid oxide fuel cell by aqueous tape casting", Journal of power sources, 218, 2012, 307-312.
40) A. Akbari-Fakhrabadi, Ricardo E. Avila, Hector E. Carrasco, S. Ananthakumar, R.V. Mangalaraja, "Combustion synthesis of NiO-$Ce_{0.9}Gd_{0.1}O_{1.95}$ nanocomposite anode and its electrical characteristics of semi-cell configured SOFC assembly", Journal of Alloys and Compounds, 541, 2012, 1-5.
41) A. Akbari-Fakhrabadi, R. Mahmudi, A.R. Geranmayeh, M. Jamshidijam, "Impression creep behavior of a Cu-6Ni-2Mn-2Sn-2Al alloy", Materials Science and Engineering A, 535, 2012, 202-208.
42) A. Akbari-Fakhrabadi, R. Mahmudi, A. Karsaz, and A.R. Geranmayeh, "Creep behavior of copper and Cu-0.3Cr-0.1Ag alloy", Journal of Engineering Materials and Technology, 132, 2010, 044501.
43) R. Mahmudi, A. Karsaz, A. Akbari-Fakhrabadi, A.R. Geranmayeh, "Impression creep study of a Cu-0.3Cr-0.1Ag alloy", Materials Science and Engineering A, 527, 2010, 2702-2708.
44) S. Asadi Kouhanjani, A. Zare Bidaki, Ali Akbari, "The Effect of Sliding Speed and Amount of Loading on Friction and Wear Behavior of Cu-0.65%wt.Cr Alloy", Journal of Alloys and Compounds, 486, 2009, 319-324.

International Conference Papers

1) **A. Akbari-Fakhrabadi**, O. Rodríguez, V. Meruane, "Ferroelastic characterization of $LaCoO_3$ by impression testing", 7th Internation Congress on Ceramics (ICC7), 17-21 June 2018, Foz do Iguacu, Brazil.
2) J.I. Canales, **A. Akbari-Fakhrabadi**, Structural and mechanical properties of $La_2NiO_{4+\delta}$ synthesized by sonochemical method, 20th Topical Meeting of the International Society of Electrochemistry, 19-22 March 2017, Buenos Aires, Argentina.
3) **Ali Akbari-Fakhrabadi**, Marcelo Orellana, Viviana Meruane, "Mechanical properties of $La_{0.6}Sr_{0.4}M_{0.1}Fe_{0.9}O_{3-\delta}$ (M: Co and Ni) perovskites as electrode material for SOFCs", 12th EUROPEAN SOFC & SOE FORUM, 5-8 July 2016, Lucerne, Switzerland.
4) **A. Akbari-Fakhrabadi**, R. Espinoza-Gonzalez, Low frequency ultrasound assisted synthesis of $La_{0.6}Sr_{0.4}M_{0.1}Fe_{0.9}O_{3-\delta}$ (M: Co, Ni and Cu) perovskite nanostructures, XIV Brazilian MRS meeting 2015, 27 Sep to 01 Oct., Rio de Janeiro, Brazil.
5) **Ali Akbari-Fakhrabadi**, P. Sathishkumar, K. Ramam, R. V. Mangalaraja, Sonochemical synthesis of $La_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-\delta}$ (LSCF) perovskite, Fuel Cells 2014, 3-4 April 2014, Amesterdam, Netherlands.
6) **Ali Akbari-Fakhrabadi**, Mangalaraja R. Viswanathan, Jonathan B. Usuba, Mahdiyeh Jamshidijam and Felipe A. Sanhueza, *"Effect of dispersant on microstructure of gadolinia-doped ceria electrolyte for SOFC fabricated by aqueous tape casting"*, CONAMET/SAM-13th, 20-23 Aug. 2013, PtoIguvazu, Argentina.

7) **Ali Akbari-Fakhrabadi**, M. Jamshidijam and R.V. Mangalaraja, *"Combustion synthesis of LSCF-GDC nanocomposite and its powder characteristics"*, CONAMET/SAM-12th, 22-26 Oct. 2012, Valparaiso, Chile.
8) **Ali Akbari-Fakhrabadi**, G. H. Hasani and M. Jamshidijam, *"An experimental investigation on the effect of annealing treatment on strain inhomogeneity in the cross-section of drawn copper wires"*, 19th International conference on metallurgy and materials, 18-20 May 2010, Roznov pod Radhastem , Czech Republic.
9) **Ali Akbari-Fakhrabadi**, M. Khakbiz, and M. Jamshidijam, *"Characterization of Al (6061)-Carbon Nanotube Nanocomposite Prepared by Mechanical Alloying"*, 2ed International Conference form Nanoparticles & Nanomaterials to Nanodevices & Nanosystems (ic4n 2009), 2009, Rhodes, Greece.
10) **Ali Akbari-Fakhrabadi**, R. Mahmudi, G.H. Akbari, M. Jamshidijam, *"Development of grain size distribution in 70-30 Brass containing alloying elements"*, 11th annual conference of Iranian metallurgical engineering society, 22-23 October 2007, Isfahan, Iran.



RESEARCH AND DEVELOPMENT PROJECTS

Department of Mechanical Engineering at University of Chile, Santiago – Chile:

- FONDECYT Regular project, No. 1200141, PI¸ 2019-2023, Time Dependent Creep Deformation of Lanthanum based Ferroelastic Perovskite Ceramics.

- FONDECYT Postdoctoral project, No. 3180055, Sponsor Investigator¸ 2018-2021, Novel Multiferroic $BiFe_{1-x}T_xO_3/CoFe_2O_4/RTO_3$ (R=rare earth; T = Mn, Ni and Cr) Nanocomposites and Thin Films: Structural, Vibrational, Magneto-electric Properties for spintronic applications.

- FONDECYT project, No. 11160202, PI¸ 2016-2019, Development on the synthesis, fabrication and characterization of La-based perovskite nanostructures for reversible solid oxide cells.

- FONDECYT Postdoctoral project, No. 3170696, Sponsor Investigator¸ 2017-2020, Fabrication of Ferrite/Carbon hybrid nanomaterial for electrochemical energy storage applications.

- FONDECYT project, No. 3140180, PI, 2013-2016, Development on the fabrication and performance analysis of Ni-(Gd,Sm)CeO_2 anode supported planar solid oxide fuel cell.

Department of Materials Engineering at the Islamic Azad University of Sirjan, Sirjan – Iran:

- IAU project, PI, 2005-2007, Effect of Al content on grain growth behavior 70-30 brass containing iron impurity, Iran.

- IAU project, PI, 2007-2009, Creep behavior of age hardening Cu-Ag-Cr alloy, Iran.

- IAU project, PI, 2009-2011, Creep behavior of Cu-6Ni-2Mn-2Sn-2Al-X alloys(X=Cr & Zr), Iran.

- IAU project, Co-Researcher, 2009-2011, Wear Behavior of Magnesium Composite Reinforced with MWCNT Processed by Friction Stir Processing, Iran.