

## **Personal Profile**

- **Current Position:**Assistant professor (Nanomaterial department)- International coordinator at University of Guilan-Head of Group
- **Name:** AhmadAhmadi Daryaknari
- **Date of Birth:** 13Jul. 1982
- **Place of Birth:** Tehran, Iran
- **Marital status:** Married



## **Education**

### **PhD in Mechanical Engineering**

The University of Tokyo, Mechanical Engineering(Tokyo, Japan) 2012-2015.

### **MSc in Nanomaterial Engineering**

Material and Energy Research Center(Tehran, Iran) 2006 - 2009.

### **BSc in Material Engineering**

Sharif University of Technology (Tehran, Iran) 2001- 2006.

## **Projects**

### **PhD final project**

Electrophoretic deposition of carbon nanostructured catalyst supports for electrodes used in direct ethanol fuel cells

### **M.Sc final project**

Fabrication of zinc oxide nanopowders by wet chemistry and evaluation of effect of transition elements as dopant on their gas sensing properties.

### **B.Sc final project**

Production of nickel oxide powders by electro-winning of nickel sulfate

## **Teaching Academic Courses**

- Analysis and characterization of materials
- Synthesis of nanomaterials
- Thermodynamics of materials
- Introduction to nanoelectronics

## **Graduate Research Assistant**

## **Postdoctoral position at Amirkabir University of Technology supported by National Elites Foundation (2016-2017)**

Title of Postdoctoral research: Electrophoretic deposition for fabrication of fuel cell electrocatalyst and Li-ion battery anode

## **Postdoctoral research at the University of Tokyo (2015-2016).**

Title of Postdoctoral research: Electrophoretic deposition of carbon nanostructured catalyst supports for electrodes used in direct ethanol fuel cells

## **Research position at Amirkabir university of technology (2008-2009)**

Production of anodic alumina membrane from commercial aluminium to use in fuel cell.

## **Research interests**

- Electrocatalysts and Fuel cells
- Corrosion and Coatings
- Electrodeposition
- Li-ion batteries
- Supercapacitors
- Gas and biosensors
- Modeling and simulation
- Synthesize and characterization of nanostructured materials.

## **List of Publications**

1. Negar Hosseinzadeh Kouchehbaghi, Majid Sohrabi, Milad Razbin, **Ahmad Ahmadi Daryakenari**, Marjan Abbasi, Seyed Hajir Bahrami, Soft computing procedure to optimize the electrospinning parameters of polyacrylonitrile nanofibrous air filter, The Journal of The Textile Institute, <https://doi.org/10.1080/00405000.2023.2263678>, Just Accepted.
2. Fatemeh Poursalehi, Mehran Javanbakht, **Ahmad Ahmadi Daryakenari**, Bia Gao, Binder-Free LiNi<sub>0.8</sub>Mn<sub>0.1</sub>Co<sub>0.1</sub>O<sub>2</sub>/Multi-Walled Carbon Nanotube Prepared by One-Step Electrophoretic Deposition Method for Efficient Li-Ion-Battery Cathodes, Journal of The Electrochemical Society, 2023, 8, 080508.
3. Mohammad Golrokh Siahroudi, **Ahmad Ahmadi Daryakenari (corresponding Author)**, Yaser Bahari, Fatemeh Jalali Koldeh, Behrooz Mosallanejad, Majid Karami Keshmarzi, Mohammad Akrami, International Journal of Electrochemical Science, 2023, 18, 100320.
4. Omid Mohammadi, Yaser Bahari, **Ahmad Ahmadi Daryakenari**, Fatemeh Jalali Koldeh, Xiaoran Zhang, Zhi Qun Tian, Pei Kang Shen, NiCoP nanoarchitectures: One-step controlled electrodeposition and their application as efficient electrocatalysts for boosting hydrogen evolution reaction, International Journal of Hydrogen Energy, 2022, 47, 34954.

5. Somayeh Sepehri, **Ahmad Ahmadi Daryakenari (corresponding Author)**, Behrooz Mosallanejad, Arash Montazeri, Hossein Ghafarian-Zahmatkesh, Shaghayegh Sadeghi Malek, Mohammad Ahmadi Daryakenari, Jean-Jacques Delaunay, Majid Yamini, Reduced NiO nanostructures grown on nickel foam by anodization and heat treatment for oxygen evolution reaction, *Journal of Solid State Chemistry*, 312, 2022, 12371.
6. Reihane Etefagh, Seyed Mohammad Rozati, **Ahmad Ahmadi Daryakenari**, Fatemeh Poursalehi, Majid Karami Keshmarzi, Enhanced Li-storage performance of In-doped  $\text{Li}_{1.21}[\text{Mn}_{0.54}\text{Ni}_{0.125}\text{Co}_{0.125}]\text{O}_2$  as Li- and Mn-rich cathode materials for lithium-ion batteries, *Journal of Applied Electrochemistry*, 2022, 1.
7. Behrooz Mosallanejad, Shaghayegh Sadeghi Malek, Mahshid Ershadi, Hossein Sharifi, **Ahmad Ahmadi Daryakenari**, Farshad Boorboor Ajdari, Seeram Ramakrishna, Insights into the efficient roles of solid electrolyte interphase derived from vinylene carbonate additive in rechargeable batteries, *Journal of Electroanalytical Chemistry*, 2022, 116126.
8. M Ahmadi Daryakenari, **A Ahmadi Daryakenari**, M Hajian Heida, Synthesis of Silica Aerogel from Rice Husk by Ambient Pressure Drying, 2022, *Nanomaterials*, 2022, 14, 1.
9. Mohammad Ranjbar Hamghavandi, Arash Montazeri, Ahmad **Ahmadi Daryakenari**, Malihe Pishvaei, Preparation and characterization of chitosan/graphene oxide nanocomposite coatings on Mg-2 wt% Zn scaffold by pulse electrodeposition process, *Biomedical Materials*, Volume 16, September 2021, 065005.
10. Behrooz Mosallanejad, Shaghayegh Sadeghi Malek, Mahshid Ershadi, **Ahmad Ahmadi Daryakenari**, Qi Cao, Farshad Boorboor Ajdari, Seeram Ramakrishna, Cycling degradation and safety issues in sodium-ion batteries: promises of electrolyte additives, *Journal of Electroanalytical Chemistry*, Volume 895, August 2021, 115505.
11. Arash Montazeri, Fariba Saeedi, Yaser Bahari, **Ahmad Ahmadi Daryakenari**, Preclinical assessment of chitosan-polyvinyl alcohol-graphene oxide nanocomposite scaffolds as a wound dressing, *Polymer and Polymer Composites*, July 2021.
12. **Ahmad Ahmadi Daryakenari (Corresponding Author)**, Behrooz Mosallanejad, Erfan Zare, Mohammad Ahmadi Daryakenari, Arash Montazeri, Aleksandra Apostoluk, and Jean-Jacques Delaunay (Corresponding Author), Highly efficient electrocatalysts fabricated via electrophoretic deposition for alcohol oxidation, oxygen reduction, hydrogen evolution, and oxygen evolution reactions, *International Journal of Hydrogen Energy*, Volume 46, February 2021, 7263-7283.
13. Mohammad Golrokh Siahroudi, **Ahmad Ahmadi Daryakenari (Corresponding Author)**, Yaser bahari molamahaleh, Qi Cao, Mohammad Ahmadi Daryakenari, Jean Jacques Delaunay, Hossein Siavoshi, Fatemeh Molaei, Ethylene glycol-assisted solvo-hydrothermal synthesis of NGr-Co<sub>3</sub>O<sub>4</sub> nanostructures for ethanol electrooxidation, *International Journal of Hydrogen Energy*, Volume 45, November 2020, 30357-30366.
14. Majid Karami Keshmarzi, Abolfazl Fathollahi Zonouz, Fatemeh Poursalehi, Behrooz Mosallanejad, **Ahmad Ahmadi Daryakenari (Corresponding Author)**, Electrophoretic deposition of nanographitic flakes/Co<sub>3</sub>O<sub>4</sub> nanocomposite layers synthesized by solvothermal process for improved lithium-ion-battery anode, *Journal of Solid State Chemistry*, Volume 288, August 2020, 12147.

15. M. KaramiKeshmarzi, **A. Ahmadi Daryakenari**, H. Omidvar, M. Javanbakht, M. Zahed Ahmadi, J. J. Delaunay, M. Badrnezhad, Pulsed Electrophoretic Deposition of Nanographitic Flake-Nanostructured  $\text{Co}_3\text{O}_4$  Composite Layers for efficient Lithium-Ion-Battery Anode, *Journal of Alloys and Compounds*, Vol. 805, 2019, 924-933.
16. **A. Ahmadi Daryakenari (Corresponding Author)**, M. Ahmadi Daryakenari, H. Omidvar, Sputtering ultra small Pt on nanographitic flakes deposited by electrophoresis for ethanol electrooxidation, *AIP Conference Proceedings*, 2018, 1920, 020002.
17. **Ahmad Ahmadi Daryakenari**, Davood Hosseini, Mohammad Hassan Mirfasih, Aleksandra Apostoluk, Christoph R. Müller, Jean-Jacques Delaunay, "Formation of NiO nanoparticle-attached nanographitic layers deposited by pulsed electrophoretic deposition for ethanol electro-oxidation", *Journal of Alloys and Compounds*, Vol. 698, 2017, 571-576.
18. M. Ahmadi Daryakenari, M. Zohrabi, AhmadAhmadi Daryakenari, Effect of the removal of the barrier layer period in productive process for anodic alumina membrane, *NANOSYSTEMS: PHYSICS, CHEMISTRY, MATHEMATICS*, Vol. 7, 2016, 1-5.
19. **Ahmad Ahmadi Daryakenari**, D Hosseini, T. Saito, A. Apostoluk, C. R. Müller, J. J. Delaunay, "Single-Step Electrophoretic Deposition of Non-Noble Metal Catalyst Layer with Low Onset Voltage for Ethanol Electro-oxidation" *ACS Appl. Mater. Interfaces* (IF:7.2), Vol. 8, 2016, 15975-15984.
20. **Ahmad Ahmadi Daryakenari**, D Hosseini, T. Saito, A. Apostoluk, C. R. Müller, J. J. Delaunay, "Ethanol on nanoworm-shaped Pd particles supported by nanographitic layers fabricated by electrophoretic deposition," *RSC Advances* (IF: 3.3), Vol. 5, 2015, 52578-52587.
21. **Ahmad Ahmadi Daryakenari**, A. Apostoluk, D. Aradilla, S. Sadki, J. J. Delaunay, "Pulse electropolymerization synthesis of PPy(DBS) nanoparticle layers," *Journal of Solid State Electrochemistry* (IF: 2.4), Vol. 19, 2015, 655-661.
22. **Ahmad Ahmadi Daryakenari**, A. Apostoluk, J. J. Delaunay, "Effect of Pt decoration on the gas response of ZnO nano-particles," *Physica Status Solidi (c)*, Vol. 10, 2013, 1297-1300.
23. M. Ahmadi Daryakenari, M. Samimi, , **AhmadAhmadi Daryakenari**, H. Omidvar, Evaluation of anodic alumina membrane synthesized at different voltages, *Advanced Science, Engineering and Medicine*, 2013, DOI:10.1166/asem.2013.1281.
24. **Ahmad Ahmadi Daryakenari**, M. Ahmadi Daryakenari, Y. Bahari, H.omidvar, "Preparation and ethanol sensing properties of ZnO nanoparticles via a novel Sol-gel method," *ISRN Nanotechnology*, Vol . 2012, 2012, 1-6.
25. **Ahmad AhmadiDaryakenari**, M. R. Vaezi, T. Ebadzadeh, M. AhmadiDaryakenar, "Evaluation of ethanol gas sensing properties of ZnO nanopowder doped with Cu and Fe," *International Journal of Physical Sciences*, Vol.7, 2012, 2110 – 2117.

### **Honors & Awards**

- KAKENHI Grant Numbers (26289013, 15F15359) Grant for the emergence of scientific breakthroughs in Japan, 2016.
- Grants-in-Aid for Scientific Research (25630019) from JSPS (Japanese Grant) for pulse electropolymerization research, 2014.

- JSPS (Japanese Grant) and Nanotechnology Platform (project No. 12024046) of MEXT support for

No	Title of thesis	Condition	Institution	Degree
1	Preparation and investigation of graphene nanocomposite anodes based on metal oxides Ni <sub>x</sub> Co <sub>y</sub> O <sub>z</sub> with electrophoretic deposition method for Li-ion batteries	Completed (2019)	Amirkabir University of Technology	Master
2	Study of anode electrodes used in direct ethanol fuel cell fabricated by electrophoretic deposition	Completed (2019)	University of Guilan	Master

ethanol electro-oxidation by electrophoretic process, 2015.

- Reviewer for Journal of Energy Chemistry, ACS Applied Materials and Interfaces, Electrochimica Acta and IEEE Transactions on Nanotechnology

**List of theses have been guided by me**

3	Co-P nanostructures: Synthesis and electrocatalytic activity study for hydrogen evolution reaction	Completed (2019)	University of Guilan	Master
4	Electrophoretic Deposition of Graphen-CoxNiyOzPr composite for electrocatalyst activities	Completed (2020)	University of Guilan	Master
5	NiO Nanostructures Grown on Ni Foam as Efficient Electrocatalysts for Oxygen Evolution Reaction	Completed (2020)	University of Guilan	Mater
6	Synthesis of electrochemical glucose sensor : based on copper oxide nanostructures	Completed (2022)	University of Guilan	Master
7	Synthesis of Co <sub>3</sub> O <sub>4</sub> nanostructures for electrochemical oxygen evolution reaction	ongoing	University of Guilan	Master
8	Preparation and investigation of the LiNi <sub>x</sub> Mn <sub>y</sub> Co <sub>z</sub> O <sub>2</sub> cathodes by electrophoretic deposition for Li-ion batteries	ongoing	Amirkabir University of Technology	PhD
9	Electrochemical extraction of Li from brines by MnO <sub>2</sub> nanostructures	ongoing	University of Guilan	Master

## References

1. Jean-Jacques Delaunay (Associate Professor, Mechanical Engineering, The University of Tokyo)  
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2. Alexandra Apostoluk (Associate Professor, Lyon Institute of Nanotechnologies)  
Email: aleksandra.apostoluk@insa-lyon.fr
3. Hamid Omidvar (Associate Professor, Material Engineering, Amirkabir University of Technology)  
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