Nima Dalir

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Education:

2014-2018		**PhD of Physical Chemistry** *Tarbiat Modares University, Tehran, Iran.* **Thesis Topic:** *Study of thermodynamics and electro–optics properties of nematic liquid crystal doped with carbon nanostructure* **Thesis grade: 20/20**
2012 – 2014		**Master of Physical Chemistry** *Tarbiat Modares University, Tehran, Iran.* **Thesis Topic:** *The effect of doped nanoparticles on the properties of mixture of nematic liquid crystal* **Thesis grade: 19.85/20**
2008 – 2012		**Bachelor of Chemistry** *University of Guilan, Rasht, Iran.* **Thesis Topic:** The role of spectroscopy method in drug delivery **Thesis grade: 20 / 20**

Publications:

1) *S Javadian, M Moslemi, H Gharibi, Z Parviz; **N Dalir**, Ali Zeinodiny, "evelopment and evaluation of a dual silica structure integrated with a metal-organic framework as a fast-charging anode for future lithium-ion batteries" Journal of power sources, (2024) accepted in press.*

2) *A Zeinodiny, S Javadian, **N Dalir**, H Gharibi, M Moslemi" A facile approach to introducing high-stable and long-life cathode material based on $MgMn_2O_4$@ $Ni_{0.25}$ composite nitrogen-doped reduced graphene oxide for rechargeable Mg batteries" Journal of Alloys and Compounds, 1007 (2024) 176346.*

3) *B Ghorbannejad, A Mahjoub, **N Dalir"** Development and application of fluorine doped bismuth vanadate reduced graphene oxide Nafion composite electrode as an electrochemical sensor for 4-chlorophenol" Scientific Reports, 13 (2023) 21912.*

4) *M Khodaee, **N Dalir**, F Feghhi, N Ansari, M Mohammadimasoudi, A Goudarzi, AF Nasiri, M Kolahdouz, SM Mohseni" Enhancement in electrical conductivity of liquid crystals by graphene metal oxide composites" Scientific Reports, 13 (2023) 11688.*

5) *S Javadian, A Zeinodiny, **N Dalir**, H Gharibi, SMJ Ghavam, "Facile one step self-template synthesis of NixMgMn2O4 (X= 0.12 to 0.50) alloys as a promising cathode for magnesium ion battery" Materials Chemistry and Physics, 298 (2023) 127447.*

6) S Javadian, SMJ Ghavam, ***N Dalir***, H Gharibi," Template-based design hollow spheres spinel and reduce graphene oxide composite as a super stable cathode for aqueous Mg-ion battery" *Materials Chemistry and Physics, 284 (2022) 126050.*

7) H Gharibi, ***N Dalir***, M Jafari, MJ Parnian, M Zhiani, "Engineering dual metal single-atom sites with the nitrogen-coordinated nonprecious catalyst for oxygen reduction reaction (ORR) in acidic electrolyte" *Applied Surface Science, 572 (2022) 151367.*

8) ***N. Dalir***, *S. Javadian, "Thermodynamic study for the role of functional group on the honey-comb pattern interaction between CNT and E5CN7 nematic liquid crystal" The Journal of molecular liquid, 341 (2021) 117287.*

9) ***N. Dalir***, *S. Javadian, S. M. J. Ghavam, H. Gharibi" The Critical Role of Ionic Liquid Crystal on Mg^{2+} Ion Transport Properties in Magnesium Ion Batteries; Performance and Mechanism Approach" Journal of The Electrochemical Society, 168 (2021) 070519.*

10) *S. Javadian, E. Bayat, Z. Parviz, **N. Dalir**, H. Gharibi," New rationally designed hybrid polypyrrole@ $SnCoS_4$ as an efficient anode for lithium-ion batteries" New Journal of Chemistry, 45 (2021) 11737-11751.*

11) *S. Javadian, Kh. Najafi, S M. Sadrpoor, F. Ektefa, **N. Dalir**, M. Nikkhah," Graphene quantum dots based magnetic nanoparticles as a promising delivery system for controlled doxorubicin release" The Journal of molecular liquid, 331 (2021) 115746.*

12) ***N. Dalir***, *S. Javadian, M. Karimi, A. Heydari. " Inspection of Thermodynamic Behaviors in Binary Mixtures of a Double Chain Ionic Liquid Crystal with a Thermotropic Liquid Crystal." Journal of Chemical & Engineering Data 65 (2020): 3605-3612.*

13) ***N. Dalir***, *S. Javadian " Evolution of morphology and electrochemical properties of colloidal nematic liquid crystal doped with carbon nanotubes and magnetite." The Journal of molecular liquid, 287 (2019) 110927.*

14) ***N. Dalir***, *S. Javadian, J. Kakemam and S. Morteza sadrpoor. "Enhance the electrical conductivity and charge storage of nematic phase by doping 0D photoluminescent graphene was prepared with small organic molecule as a new array quantum dot liquid crystal displays." The Journal of molecular liquid, 276 (2019) 290-295.*

15) ***N. Dalir,*** *S. Javadian, J. Kakemam and A. Yousefi" Evolution of electro-chemical and electro-optical properties of nematic liquid crystal doped with graphene oxide" The Journal of molecular liquid, 265 (2018) 398-407.*

16) ***N. Dalir***, *S. Javadian "Synergistic effect of non-covalent interaction in colloidal nematic liquid crystal doped with magnetic functionalized single-walled carbon nanotubes" Journal of Applied Physics, 123 (2018) 115103-115114.*

17) ***N. Dalir***, *S. Javadian and Z. dehghani "High optical nonlinearity of nematic liquid crystal doped with graphene oxide" The Journal of molecular liquid, 244 (2017) 103-109.*

18) *S. Javadian, **N. Dalir**, J. kakemam " Non-covalent intermolecular interactions of colloidal nematic liquid crystals doped with graphene oxide" Liquid crystal 44 (9)- (2017) 1341-1355.*

19) *Z Dehghani, **N Dalir**, M Nadafan, MH Majles Ara, E Saievar Iranizad "Investigation of electrical and nonlinear optical properties of colloidal composite nematic liquid crystal" The journal of molecular liquid, 225(2017) 502-507.*

20) ***N. Dalir***, *S. Javadian, A.G. Gilani "The ferroelectricity effect of nanoparticles on thermodynamics and electro - optics of novel cyanobiphenyl eutectic binary mixture liquid crystals" The journal of molecular liquid, 206 (2015) 336-345.*

21) *S. Javadian, **N. Dalir**, A.G. Gilani, J. Kakemam, A. Yousefi, "A new approach to study interaction parameters in cyanobiphenyl liquid crystal binary systems" The Journal of Chemical Thermodynamics, 80 (2015) 22-29.*

22) *A. Yousefi, S. Javadian, **N. Dalir**, J. Akbari " Imidazolium-Based Ionic Liquids as Modulators of Corrosion Inhibition of SDS on Mild Steel in Hydrochloric Acid Solutions: Experimental and Theoretical Studies" RSC Advances, 5 (2015) 11697-11713.*

23) *S. Javadian, B. Darbasizadeh, A. Yousefi, F. Ektefa**, N. Dalir***, *J. Kakemam "Dye-surfactant aggregates as corrosion inhibitor for mild steel in NaCl medium: Experimental and theoretical studies" Journal of the Taiwan Institute of Chemical Engineers, 71 (2017) 344-354.*

24) *M Shahraki, S Elyasi, H Heydari, **N Dalir** "Synthesis of Carbon-Based Spinel NiCo2O4 Nanocomposite and Its Application as an Electrochemical Capacitor" Journal of Electronic Materials, 46 (2017) 4948-4954.*

25) *P. Peyvand, Z. Vaezi, M. Sedghi, **N. Dalir**, L. Ma'mani, H. Naderi-Manesh "Imidazolium-based ionic liquid functionalized mesoporous silica nanoparticles as a promising nano-carrier: response surface strategy to investigate and optimize loading and release process for Lapatinib delivery" Pharmaceutical Development and Technology, 25 (2020) 1150-1161.*

26) *A. Yousefi, S. Javadian, M. Sharifi, **N. Dalir** and A. motaee "An Experimental and Theoretical Study of Biodegradable Gemini Surfactants and Surfactant/Carbon Nanotubes (CNTs) Mixtures as New Corrosion Inhibitor" Journal of bio-and tribo-corrosion, 5 (2019) 82.*

Research interest:

Phase transition and thermodynamics of liquid crystal materials, linear and nonlinear Spectroscopy, Surface electrochemistry, application of LC material in sensor and solar cell

Congress / Workshops Participation & Presentations:

1) *A. Khademi Pirbasti, J. Farashi, H. Gharibi,* ***N. Dalir."*** *The effect of changing the type of surfactant as an electrolyte additive in the hard anodizing of aluminum alloy 2024" 18th Biennial Electrochemistry Seminar of Iran, Mar 2024, Urmia, Iran.*

2) *A. Khademi Pirbasti, J. Farashi, H. Gharibi,* ***N. Dalir.*** *"The effect of using surfactant as additive in corrosion protection of aluminum 2024-T3 by hard anodizing method" 18th Biennial Electrochemistry Seminar of Iran, Mar 2024, Urmia, Iran.*

3) *S. Favchi, S. Javadian,* ***N. Dalir."*** *Progress in Self-healing Anticorrosion Coating Based on Lignin Nanoparticles Encapsulating Inhibitor" 17th Biennial Electrochemistry Seminar of Iran, Mar 2023, Tehran, Iran.*

4) *M. Ebne Alipuor, S. Javadian,* ***N. Dalir."*** *Investigating the effect of MgMn2O4 nanoparticles and CTAB surfactant on the electrochemical properties of nematic liquid crystal" 17th Biennial Electrochemistry Seminar of Iran, Mar 2023, Tehran, Iran.*

5) *R. Rostami, S. Javadian,* ***N. Dalir."*** *Conductive polymer composite with MgMn2O4 as a cathode in magnesium-ion battery" 17th Biennial Electrochemistry Seminar of Iran, Mar 2023, Tehran, Iran.*

6) *A. Zeinodiny, S. Javadian,* ***N. Dalir.*** *"Investigation nitrogen-doped carbon substrates with Urea/Ammonia source composite with Spinel structure as efficient cathodes in Magnesium-ion Batteries" 17th Biennial Electrochemistry Seminar of Iran, Mar 2023, Tehran, Iran.*

7) *A. Khademi,* ***N. Dalir****, M. Mohammadi, H. Gharibi, F. Habibiyan, S. Rahmanzade. The Effect of anodizing conditions on aluminum corrosion" 17th Biennial Electrochemistry Seminar of Iran, Mar 2023, Tehran, Iran.*

8) *F. Habibiyan,* ***N. Dalir****, M. Mohammadi, H. Gharibi, S. Rahmanzade, A. Khademi." Study the effect of anodizing voltage on the aluminium 1xxx alloy" 17th Biennial Electrochemistry Seminar of Iran, Mar 2023, Tehran, Iran.*

9) *A. Khademi,* ***N. Dalir****, M. Mohammadi, H. Gharibi, S. Rahmanzade, F. Habibiyan. "Modification surface of aluminum alloy 2xxx series by nanopores film coating by using hard anodizing method" 17th Biennial Electrochemistry Seminar of Iran, Mar 2023, Tehran, Iran.*

10) *M. Fardi, M. Vafaee****, N. Dalir****, M. Nasrollahpour. "DFT study of h-BN as anode material for Lithium and Sodium storage" 17th Biennial Electrochemistry Seminar of Iran, Mar 2023, Tehran, Iran.*

11) *F. Habibiyan,* ***N. Dalir****, M. Mohammadi, H. Gharibi, S. Rahmanzade, A. Khademi" Electrolytic coloring of anodized aluminum based on Nickel sulfate salt" 17th Biennial Electrochemistry Seminar of Iran, Mar 2023, Tehran, Iran.*

12) *M. Fardi, M. Vafaee****, N. Dalir****, M. Nasrollahpour." DFT study on the structure of magnesium battery anode" 17th Biennial Electrochemistry Seminar of Iran, Mar 2023, Tehran, Iran.*

13) *M. Moslemi Varaki, S. Javadian,* ***N. Dalir."*** *Green design of Cobalt dopant on Silica /Oxygen-Cobalt nanocomposite modified by Nitrogen doped Carbon nanocubes as a selective electrode for Lithium-Ion battery application" 16th Biennial Electrochemistry Seminar of Iran, Feb 2022, Tehran, Iran.*

14) *R. Rostami, S. Javadian,* ***N. Dalir."*** *Conductive polymer composites as cathode in magnesium ion batteries"* ***16th Biennial Electrochemistry Seminar of Iran, Feb 2022, Tehran, Iran.***

15) *A. Zeinodiny, S. Javadian,* ***N. Dalir.*** *"Investigation performance of carbon substrates like graphene oxide and graphene oxide doped with nitrogen in the cathodes of Magnesium-ion Batteries" 16th Biennial Electrochemistry Seminar of Iran, Feb 2022, Tehran, Iran.*

16) ***N. Dalir,*** *S. Javadian and A. Payvand. "Molecular orientation and dielectric anisotropy properties of E7CN5–TiO2 liquid crystal composite" 10th Biennial Electrochemistry Seminar of Iran, Dec 2015, Tehran, Iran.*

17) ***N. Dalir,*** *S. Javadian and A. Payvand "Synthesis of titanium dioxide Nanoparticles (Anatase, Rutile) with sol-gel method and extraction into organic phase." 5th International conference of nanostrcutures, March 2015, Kish-Island, Iran.*

18) ***N. Dalir,*** *S. Javadian "Determine of the phase transition and thermodynamics 4-Cyano-4'-pentylbiphenyl (5CB) by differential scanning calorimetry (DSC)." 16th Iranian phyiscal Chemistry Congress, Nov 2013, Babolsar, Iran*

Honor and Awards:

2015 Graduated with rank 2st among all M. Sc. Students in Physical chemistry, Tarbiat Modares University, Tehran, Iran.

Experiences

2019-2020 Postdoc Fellow in Dr. H. Gharibi Lab in department of chemistry in Tarbiat Modares University.

2018-2019 Postdoc Fellow in Dr. S. Javadian Lab, department of chemistry in Tarbiat Modares University.

2016-2019 Teaching Assistant (TA) in department of chemistry at Tarbiat Modares University

2014-2015 Teaching Assistant (TA) in department of chemistry at Tarbiat Modares University.

Skills:

Instrumental Experiences: *Electrochemical analyses (IES, CV and etc.), Thermal analyses (DSC & TGA), X-ray analyses (XRD & SAXS), Fluorescence, UV- Visible and FT-IR Spectroscopy*

Platforms and basic software: *Windows, Endnote, , Microsoft Word/Excel/PowerPoint, …*

Technical Software: *Gaussian, GaussView, Chemcraft, Mercury, enCIFer, Spartan, Vega Z, Yasara, Java, Chem Office.*