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Academic Experience

- 9.2022 – Present** Associate Prof. University of Kashan, Iran
- 9.2019 – 9.2020** Senior researcher, Max-Planck Institute for Polymer Research, Germany
- 9.2017 – 9.2019** Alexander von Humboldt Post Doctoral Fellow
Max-Planck Institute for Polymer Research, Germany
- Projects:
“high-k iron-polymer nanocomposite synthesis using Atom Transfer Radical Polymerization for energy storage application”
“Effect of porosity on development of nanogenerator based energy harvesters”
- 9.2013 – 8.2022** Assistant Prof. University of Kashan, Iran
Supervised 1 postdoc researcher 3 PhD and 16 master students
- 8.2015 – 8.2016** Post Doctoral Endeavor Fellow, Deakin University, Australia
- Projects:
1- “Energy harvesting from smart textiles”

Education

- 2009 – 2013** PhD. Polymer Engineering, Amirkabir University of Technology
Sabbatical leave: Deakin University, Australia.
- 2006 – 2008** MSc. Polymer Engineering, Amirkabir University of Technology
- 2001 – 2005** BSc. Chemical Engineering, Isfahan University of Technology

Awards

- 2020** Rutern fellowship, Alexander von Humboldt Foundation, Germany.
- 2017** George Forster Fellowship from the Alexander von Humboldt Foundation, Germany.
- 2015** Endeavour Fellowship from the Australian Government, Australia.
- 2013** PhD scholarship from Ministry of Science, Iran.

Keynote Speaker:

1. The 6th National Seminar on Polymer, 27-28.10.2021, Sahand University of Technology.
2. 16th International Seminar on Polymer Science and Technology (ISPST 2024), 7-9.9.2024, Sahand University of Technology.

Grants:

National:

INSF: Development of Polymer based Nanogenerators.

INSF: (postdoc project): Development of Electronic Skin for HMI Applications.

Nano Comitee: Development of self-powered burglar alarms using piezoelectric nanogenerator technology.

Defence Industry: Development of high-strength porous carbon fibers.

International:

Refer to awards

Publications (Google scholar H-index 25)

Book Chapters

1. Michels, J. J., Dehsari, H. S., **Abolhasani, M. M.**, & Asadi, K. (2022). Liquid structuring in fluoropolymer solutions induced by water. In *Organic Ferroelectric Materials and Applications* (pp. 357-373). Woodhead Publishing.
2. Nayak, G.C. Mishra, J., Tiwari, S.K., **Abolhasani, M. M.**, Azimi, S. (2017) Fundamentals of Polymer Blends and Its Thermodynamics, in *Micro and Nano Fibrillar Composites (MFCs and NFCs) from Polymer Blends* Elsevier , Woodhead Publishing Series in Composites Science and Engineering.ch2

Peer Reviewed (*:IF>15)

1. Azimi, S., Janqamsari, A., Jafari, A., Rayati, M., Noori, E., Rafiee, E., Davoodbeygi, Y., Nia, N., Abdi, H., **Abolhasani, M. M.**, PVDF composite fibers for wireless fall-alert detection. *Materials Today Communications* 2024, 38, 107899.
2. **Abolhasani, M. M.**, Soleimani, H., Preparation and Evaluation of Piezoelectric Nanogenerators Based on PVDF Nanowires. *Energy Engineering and Management* 2024, 12 (3), 106-113
3. Pourbafrani, M., Azimi, S., Yaghoobi Nia, N., Zendehtdel, M., **Abolhasani, M. M.** The Effect of Electrospinning Parameters on Piezoelectric PVDF-TrFE Nanofibers: Experimental and Simulation Study. *Energies* 2023, 16 (1), 37.
4. **Abolhasani, M. M.**, Azimi, S., Mousavi, M., Anwar, S., Hassanpour Amiri, M., Shirvanimoghaddam, K., ... & Asadi, K. Porous graphene/poly (vinylidene fluoride) nanofibers for pressure sensing. *Journal of Applied Polymer Science*, 2022 139(14), 51907.
5. Abolhasani, A., Pachenari, A., Razavian, S.M., **Abolhasani, M. M.**, Towards new generation of electrode-free conductive cement composites utilizing nano carbon black. *Construction and Building Materials* 323, 126576.
6. Samimi-Sohrforozani, E., Azimi, S., Abolhasani, A., ... **Abolhasani, M. M.**, Yaghoobi Nia, N., Development of porous polyacrylonitrile composite fibers: new precursor fibers with high thermal stability. *Electronic Materials* 2021, 2 (4), 454-465.
7. Azimi, S., Abolhasani, A., Moosavi, S. M., Vanaei, F., Jafari, A., Samimi-Sohrforozani, E., ... & **Abolhasani, M. M.** Development of a Vehicle Passage Sensor Based on a PVDF Nanogenerator. *ACS Applied Electronic Materials*, 2021, 3(11), 4689-4698.
8. Azimi, S.; Golabchi, A.; Nekookar, A.; Rabani, S.; Hassanpour Amiri, M.; Asadi, K.; **Abolhasani M. M.** "In Vivo Implantation of Piezoelectric Polymer Nanogenerator on Ventricle to Power Cardiac Pacemakers " *Nano Energy* 2021, 83, 105781.*

9. Anwar, S; Hassanpour Amiri, M.; Shuai, J.; **Abolhasani, M. M.** ;Asadi, K. "Piezoelectric nylon-11 nanofibers for energy harvesting and sensing" *Advanced Functional Materials* 2021, 31, 2004326.*
10. Nia, N.; Zendejdel, M.; Abdi-Jalebi, M.; Castriotta, LA.; Kosasih, Fu.; Lamanna, E.; **Abolhasani, M. M.**; et al. "Beyond 17% stable perovskite solar module via polaron arrangement of tuned polymeric hole transport layer" *Nano Energy* 2021, 82, 105685.*
11. Soleymani, H.; Noormohammadi, M.; Kashi, M. A.; Amiri, M. H.; Michels, J. J.; Asadi, K.; **Abolhasani, M. M.** "Self-Poled Sausage-Like PVDF Nanowires Produced by Confined Phase Inversion as Novel Piezoelectric Nanogenerators" *Advanced Materials Interfaces*, 2021, 2001734.
12. **Abolhasani, M. M.**; Naebe, M; Shirvanimoghaddam, Anwar, S; Amiri, M.H.; Michels, J; Asadi, K. "Hierarchically structured porous piezoelectric polymer fibers" *Advanced Science* 2020, 7, 2000517.*
13. Anwar, S; **Abolhasani, M. M.**; Amiri, H. M.; Jeong, B.; Asadi, K. "Polymer Field-Effect Transistor Memory Based on Ferroelectric Nylon Gate Insulator" *Journal of Material Chemistry C* 2020, 8, 5535-5540.
14. Ashjari, M.; Panahandeh, F.; Niazi, Z.; **Abolhasani M. M.** "Synthesis of PLGA–mPEG star-like block copolymer to form micelle loaded magnetite as a nanocarrier for hydrophobic anticancer drug" *Journal of Drug Delivery Science and Technology* 2020, 56, 101563.
15. **Abolhasani, M. M.**; Naebe, M; Shirvanimoghaddam, M; Fashandi, H; Hamid Khayyam, Joordens, M; Pipertzis, A; Anwar, S; Berger, R; Floudas, G; Michels, J; Asadi, K. "Thermodynamic approach to tailor porosity in piezoelectric polymer fibers for application in nanogenerators" *Nano Energy* 2019, 62, 594-600.*
16. Shirvanimoghaddam, M.; Shirvanimoghaddam, K.; **Abolhasani, M. M.**; Farhangi, M.; Zahiri, V. Barsari, F.; Liu, H.; Dohler, M.; Naebe, M. "Towards a green and self-powered Internet of Things using piezoelectric energy harvesting" *IEEE Access* 2019, 7, 94533-94556.
17. **Abolhasani, M. M.**; Jalai, A; Tavana, R; Kashani, F. Z. "Processing and performance properties of amino silicone-based softener on various textile substrates" *Polymer Bulletin* 2019, 1-16.
18. Mishra, R.; Mishra, P.; Verma, K.; Mondal, A.; Chaudhary, R.; **Abolhasani, M. M.**; Loganathan S. "Electrospinning production of nanofibrous membranes" *Environmental Chemistry Letters* 2019, 7, 767-800.
19. **Abolhasani, M. M.**; Shirvanimoghaddam, k; Khayyam, H; Mousavi, M; Zohdi, N; Naebe, M. "Towards predicting the piezoelectricity and physiochemical properties of electrospun P(VDF-TrFE) nanogenerator using an artificial neural network" *Polymer Testing* 2018, 66, 178-188.
20. Shirvanimoghaddam, K; **Abolhasani, M. M.**; Polisetti, B.; Naebe, M. "Periodical patterning of a fully tailored nanocarbon on CNT for fabrication of thermoplastic composites". *Composites Part A: Applied Science and Manufacturing* 2018, 107, 304-314.
21. Shirvanimoghaddam, k; Czech, B; **Abolhasani, M. M.**; Naebe, M. "Sustainable shape controlled and periodically patterned carbon nanotube for catalysis application: introducing the cheetah skin structure" *Journal of Cleaner Production* 2018, 179, 429-440.
- K Shirvanimoghaddam, K; **Abolhasani, M. M.**; Li, Q; Khayyam, H; Naebe, M. "Cheetah skin structure: A new approach for carbon-nano-patterning of carbon nanotubes" *Composites Part A: Applied Science and Manufacturing* 2018, 95, 304-314
22. **Abolhasani, M. M.**; Shirvanimoghaddam, k; Naebe, M. "PVDF/graphene composite nanofibers with enhanced piezoelectric performance for development of robust nanogenerators" *Composites Science and Technology* 2017, 138, 49-56.
23. Shirvanimoghaddam, k; **Abolhasani, M. M.** ; Li, Q.; Naebe, M. "A new approach for carbon-nano-patterning of carbon nano-tubes" *Composites Part A: Applied Science and Manufacturing* 2017, 95, 304-314

24. Fashandi H, **Abolhasani M. M.**, Sandoghdar P, Zohdi N, Li Q, Naebe M. "Morphological changes towards enhancing piezoelectric properties of PVDF electrical generators using cellulose nanocrystals" *Cellulose* 2016 23 (6), 3625-3637.
25. **Abolhasani M. M.**, Ashjari M., Azimi S., Fashandi H. "Kinetic of Isothermal Crystallization of Poly(vinylidene fluoride) (PVDF) in a Miscible Nanocomposite blend" *Macromolecular Chemistry and Physics* 2016, 217, 533.
26. Naebe. M, **Abolhasani M. M.**, Khayyam. H, Amini. A, Fox. B, "Microcrack Damage in Polymers and Composites: A Review" *Polymer Reviews* 2016, 56, 31.
27. **Abolhasani. M. M.**, Fashandi. H, Naebe. M, "Crystalline Polymorph Transition in Poly(Vinylidene Fluoride)(PVDF)/Acrylic Rubber(ACM)/Clay Partially Miscible Hybrid" *Polymer Bulletin* 2016,73, 65.
28. Ghodsi. A Fashandi H, Zarrebini, M., **Abolhasani M. M.**, Gorji M. "Highly Effective CO2 Capture Using Super-fine PVDF Hollow Fiber Membranes with Sub-layer Large Cavities" *RSC Advances* 2015, 5, 92234.
29. **Abolhasani M. M.**, Azimi S., Fashandi H, "Enhanced Ferroelectric Properties of Electrospun Poly(vinylidene fluoride) Nanofibers by Adjusting Processing Parameters" *RSC Advances* 2015,5, 61277.
30. Fashandi H., Zarrini K., Youssefi M., **Abolhasani M. M.**, " Synergistic contribution of spinneret diameter and physical gelation to develop macrovoid-free hollow fiber membranes using single orifice spinneret" *Industrial & Engineering Chemistry Research* 2015, 54, 7728.
31. **Abolhasani. M. M.**, "Effects of Dynamic Vulcanization on Kinetics of Isothermal Crystallization in a Miscible Polymeric Blend" *New Journal of Chemistry* 2015,39, 6130.
32. Baqeri M., **Abolhasani. M. M.**, Mozdianfard M.,Guo Q., Oroumei, A, Naebe. M, "Influence of processing conditions on polymorphic behavior, crystallinity and morphology of electrospun poly(vinylidene fluoride) nanofibers" *Journal of Applied Polymer Science* 2015, 132, 42304.
33. Fashandi H, Yegane A, **Abolhasani M. M.** " Interplay of Liquid-liquid and Solid-liquid Phase Separation Mechanisms in Porosity and Polymorphism Evolution Within Poly(vinylidene fluoride) Nanofibers" *Fibers and Polymers* 2015, 16, 326.
34. **Abolhasani M. M.**, Zare. F, Zhenxiang Cheng, Naebe. M "A facile method to enhance ferroelectric properties in PVDF nanocomposites" *RSC Advances* 2015, 5, 22471.
35. **Abolhasani M. M.**, Rezai. M., Magniez. K., Guo. Q, "Fold surface free energy determination of PVDF lamellae in new miscible blends of PVDF/ACM by different thermal analysis technique" *Journal of Thermal Analysis and Calorimetry* 2015, 119, 527.
36. **Abolhasani. M. M.**, Zare. F, Naebe. M, "Does dynamic vulcanization induce phase separation?" *Soft Mater* 2014, 10, 5550.
37. **Abolhasani. M. M.**, Naebe. M, Zare, Y. Guo. Q, "Crystalline structures and α β and γ polymorphs transformation induced by nanoclay in PVDF-based nanocomposite" *Nano* 2014, 9, 1450065.
38. **Abolhasani M. M.**, Naebe M, Guo. Q, "A new approach for mechanisms of ferroelectric crystalline phase formation in PVDF nanocomposite" *Physical Chemistry Chemical Physics* 2014, 16, 10679.
39. **Abolhasani M. M.**, Naebe. M, Jalali. A, Guo. Q "Influence of miscibility phenomenon on crystalline polymorph transition in poly(vinylidene fluoride)/acrylic rubber/clay nanocomposite hybrid" *PLoS ONE* 2014, 9(2): e88715.
40. **Abolhasani M. M.**, Jalali. A, Guo. Q, Nazokdast. H, "Poly(vinylidene fluoride)-acrylic rubber partially miscible blends: Crystallization within conjugated phases induce dual lamellar crystalline structure" *Polymer* 2013, 54, 4686.
41. **Abolhasani M. M.**, Guo. Q, Jalali. A, Nazokdast. H, "Poly(vinylidene fluoride)-acrylic rubber partially miscible blends: Phase behaviour and its effects on mechanical properties" *Journal of Applied Polymer Science* 2013, 130, 1247.
42. **Abolhasani M. M.**, Arefazar, A. Mozdianfard M. "Effect of Dispersed Phase Composition on

Morphological and Mechanical Properties of PET/EVA/PP Ternary Blends” *Journal of Polymer Science. Part B*. 2010, 48,251.

43. **Abolhasani M. M.**, Arefazar A, SHokoohi SH. “PET/EVA/PP Ternary Blends: Investigation of Extended Morphological Properties” *Journal of Applied Polymer Science* 2009, 112, 1716.