

Mohammad Mahdi Abolhasani

Assistant Professor of Polymer Engineering

Head of Chemical Engineering Department

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✓ **Education**

- **PhD in Polymer Engineering** at Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran.(2009-2013);
Thesis Topic: “*Effects of vulcanization and nanoclay on morphological and mechanical properties of PVDF/ACM Polymer Blends*”.
- **M.Sc. in Polymer Engineering** at Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran, (2006-2009).
Thesis Topic: “*Morphological and Mechanical Properties of PET/EVA/PP Ternary Polymer Blends*”.
- **B.Sc. in Chemical Engineering**, Isfahan University of Technology, Isfahan, Iran, (2001-2005).
Thesis Topic: “*Determination of Economic Diameter of Carrying Polymeric Pipelines*”.

✓ **Teaching & Research Experiences**

- Assistant professor, Chemical Engineering Department, University of Kashan, Kashan, Iran.
- Visiting Researcher in Institute for Frontier Materials, Deakin University, Australia(2012).
- ‘Advanced physical chemistry of polymers’, “Polymer Chemistry & Technology”, ”fluid mechanics’, “polymeric nanocomposites” and “Material properties” Teacher in University of Kashan (one year 2013-2014, one year 2009-2010)
- Head of R&D at IGC Co., Iran(2009-2012)
- Research assistant in Polymer and Nanotechnology research groups at Petrochemical Research and Technology Company(2006-2008)

✓ **SPECIAL HONORS**

- Travel grant from ministry of Science, Iran, 2012.
- PhD Scholarship from ministry of Science, Iran, 2010.
- Member of Talented student of Amirkabir University of Technology.
- Ranked among top 0.5 % of about 500,000 participants in the university entrance exam for B.Eng degree of Mathematics 2001.

✓ **Publication & Researches**

✓ **Book Chapters**

- 1) Abolhasani. M. M., Karimkhani, V. *Chapter 23: “Characterization of polymer blends by solid-state NMR Spectroscopy”* in *Characterization of Polymer Blends Miscibility, Morphology and Interfaces*. Wiley-VCH, Weinheim. (Will be published in August 2014). <http://www.wiley-vch.de/publish/en/books/forthcomingTitles/PY00/3-527-33153-0/?sID=wcp8radp1sdd13t1s79alis8s3>
- 2) Abolhasani. M. M., Zare F., “*Basic principles of ferroelectric polymers*”. Under preparation. (in Persian).

✓ **Journal Papers**

- 1) Abolhasani. M. M., Guo. Q “Does dynamic vulcanization induce phase separation?(II): kinetic study of isothermal crystallization” submitted to *Soft Matter*, May, 30, 2014.
- 2) Abolhasani. M. M., Naebe. M, Zare. F, Zhenxiang Cheng “A facile method to enhance ferroelectric properties in PVDF nanocomposites” submitted to *Nanoscale*, May, 16, 2014.
- 3) 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” submitted to *Journal of Thermal Analysis and Calorimetry*, April, 22, 2014.
- 4) Abolhasani. M. M., "Effects of nanoclay on different polymorphs formation in conjugated phases of PVDF/ACM partially miscible blend" submitted to *Advanced Polymer Technology*, March, 23, 2014.
- 5) Abolhasani. M. M., “Composite Droplet Blends – morphology and melt linear viscoelastic properties” *International Polymer Processing*; Revised.
- 6) Abolhasani. M. M., Zare. F, Naebe. M, “Does dynamic vulcanization induce phase separation” *Soft Mater*; DOI:10.1039/C4SM00632A.
- 7) Abolhasani. M. M., Naebe. M, Zare, Y. Guo. Q, “Crystalline structures and \rightarrow and polymorphs transformation induced by nanoclay in PVDF-based nanocomposite” *Nano*; DOI: 10.1142/S1793292014500659.
- 8) 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(22): 10679.
- 9) 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.

- 10) 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.
- 11) 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.
- 12) 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.
- 13) 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.
- 14) Abolhasani. M. M, Naebe, M, “Poly(vinylidene fluoride)/acrylic rubber/clay nanocomposite blend: crystallization mechanism within a miscible blends” under preparation.
- 15) Abolhasani. M. M, Naebe, Jalali. A, “Effects of dynamic vulcanization on clay dispersion and crystalline structure of PVDF” under preparation.
- 16) Baqeri, M. Abolhasani. M. M, Naebe, M., Mozdianfard, M. “Crystalline study of PVDF/Graphene electrospun nanofibers” under preparation.

✓ **Conference Papers**

- 1) Abolhasani. M. M, Arefazar A, SHokoohi SH. Darvishi, R, Zohrevand, A. “An Investigation On The Extended Composite Droplet Morphology Of Ternary Blends” The 12th National Conference of Chemical Engineering, Tabriz, Iran. Oral Presentation.
- 2) Abolhasani. M. M, Arefazar, A. Mozdianfard M, Jalali. A. “Effect of Shell Phase Viscosity on Morphological Properties of Core Shell Blend”. 9th International Seminar on Polymer Science and Technology, Tehran, Iran. Oral Presentation.
- 3) Abolhasani. M. M, Mozdianfard M, Jalali. A. “A New Model for Prediction of Ternary Blends Modulus”. 9th International Seminar on Polymer Science and Technology, Tehran, Iran. Poster Presentation.
- 4) Abolhasani. M. M, Jalali. A. “Effect of blending of carbonyl group containing polymer on crystalline structure of PVDF polymer” PPS2011, Kish, Iran. Oral Presentation.
- 5) Abolhasani. M. M, Jalali. A. “The phase diagram and morphology of blends of poly (vinylidene fluoride) and poly (acrylate rubber). 10th International Seminar on Polymer Science and Technology, Tehran, Iran. Oral Presentation.

- 6) Baqeri, M. Abolhasani. M. M, Naebe, M., Mozdianfard, M. “Effects of solvents ratio on electroactive polymorph formation in electrospun PVDF”, NanoTR10 conference, Istanbul, Turkey. submitted.
- 7) Baqeri, M. Naebe, M., Mozdianfard, M. Abolhasani. M. M, “Investigating effects of processing condition on morphology and crystallinity of PVDF electrospun nanofibers”, NanoTR10 conference, Istanbul, Turkey. submitted.

✓ **Research Interests**

- Polymer physics Polymer structure, property and processing and physics;
- Nanocomposites and blends thermodynamic, morphology and rheology
- Polymers and fibers crystallinity and modeling
- Ferroelectric polymers
- Synthesis and characterization of polymers

✓ **Reviewer for journals**

- Chemical Engineering Journal
- Journal of Physical Chemistry Chemical Physics
- Journal of polymer international
- Journal of materials chemistry and physics
- Journal of polymer Bulletin

✓ **References**

- Professor Qipeng Guo, Professor of Polymer Engineering, Institute for Frontier Materials, Deakin University, Australia. qguo@deakin.edu.au
- Dr Minoo Naebe Research Fellow in Carbon Fibers and Composites, Institute for Frontier Materials, Deakin University, Australia. Minoo.naebe@deakin.edu.au
- Dr Vahid Karimkhani, Research Associate, Case Western Reserve University, US. Vahid.karimkhani@case.edu