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Omid Rafeie

Assistant Professor of Polymer Engineering
Faculty of Chemical & Petroleum Engineering
Tabriz University, P.O. Box: 51666-16471 Tabriz, IRAN

EDUCATION

Doctor of Philosophy in Chemical Engineering –Polymer field
Sahand University of Technology- Tabriz, Iran, 2012-2019

Master of Science in Chemical Engineering–Polymer field
Sahand University of Technology - Tabriz, Iran, 2010-2012

Bachelor of Science in Chemical Engineering–Petrochemical field
Tabriz University- Tabriz, Iran, 2006-2010

- Membership in the National Elite Foundation, 2019 up to now

THESIS

Doctoral thesis title: Correlation with rheological behavior and electrical properties of ternary systems of polyvinylidene fluoride/polyethylene/graphene under the guidance of Dr. Mir Karim Razavi Aghjeh

Master's thesis title: In-situ compatibilization of polyolefin/polystyrene alloys in the presence of nanometer particles. Under the guidance of Dr. Mir Karim Razavi Aghjeh

The title of bachelor's thesis: Improving the conductivity coefficient and heat transfer coefficient using Nano-fluid under the guidance of Dr. S. H. Hosseini

LANGUAGES

Turkish: Native
Persian: Native
English: Good

Skill

- Design and development of new polymeric material
- Problem Solving
- Communication
- Quality assurance
- Measuring Un-certainty
- Database Management

SOFTWARES

- Microsoft Office
- X-Pert
- Matlab
- Corel-draw

INDUSTRIAL EXPERIENCE

❖ R&D manager of Shani Plastic Innovative Company, Tabriz, Iran, from 2016 to 2021

Responsibility:

- Develop new compound and master-batch
- Work with product managers to understand
- Troubleshoot and fix frontend issues
- Stay up-to-date on the latest new technologies

❖ QC manager of Hofmann Company, Tabriz, Iran Dates From 2021 – To 2024

Responsibility:

- Design and Develop new fourmulation
- Quality control of UPVC Profile line
- Testing and analysis various formulation
- Work with product managers to understand
- Troubleshoot and fix frontend issues
- Stay up-to-date on the latest new technologies
- Work with standard

❖ Advisor of Hofmann Company (Tabriz, Iran) from 2023 up to now

INDUSTRIAL SUCCSESS PROJECTS

- changing the polycarbonate sheet production line to carton-plastic (PP) sheets - Shani Plastic Innovative Company, Tabrizu, Iran.
- Design and innovation of diffuser sheets with GPPS based plastic for use in light industry - Shani Plastic Company, Tabrizu, Iran.
- Acquisition and implementation international Ral GZ-716 certificate, Hofmann co.,Tabrizu, Iran

COURSES

- Physical chemistry (BSC)
- Mass transfer (BSC)
- Heat transfer1 (BSC)
- Kinetics and design of chemical reactions (BSC)
- Mechanical and physical properties of polymeric material (BSC)
- Polymer chemistry and technology (BSC)
- Chemistry and synthesis of polymerization (BSC)
- The principles and applications of nanotechnology (BSC)
- Advance Rheology of non-Newtonian fluid (MSC-PhD)
- Advance Rheology of Polymeric material (MSC-PhD)
- Characterization (MSC-PhD)
- Nanocomposites (MSC-PhD)

PROJECT AND FIELDS OF WORK

Researcher in polymer engineering and science. Specialties:

- Property improvement (Physical and mechanical behaviour)
- Testing & characterization of polymeric materials
- Composites and polymeric blends nanocomposites
  - Melt rheological characterization of various nanocomposites
  - Multiphase polymer blends containing carbon nanostructures
  - Selective Localization of Nanoparticle in a polymeric blend
- Multiphase polymer blends
  - Influence of rheological and interfacial parameters of blend components on morphology development by melt mixing
  - Characterization of blend morphologies and phase stability (coalescence)
  - Relation between morphology and mechanical properties
  - Measurement of interfacial adhesion of model compounds
- Modification of nanoparticles
- High performance Polymeric material insulator
- Energy Storage and Conversion (electro active polymer composites)
  - Influence of melt processing conditions on dielectric and mechanical performance
- UV protection of plastic material
- Ablative Material

PUBLICATION

- Synthesis and Characterization of Graphene and Functionalized Graphene via Chemical and Thermal Treatment Methods, Behzad Dehghanzad, Mir Karim Razavi Aghjeh, Omid Rafeie, Akram Tavakoli and Amin Jameie Oskooie , RSC advance journal,2015, DOI: 10.1039/C5RA19954A

- Composition and compatibilization induced morphology alteration in PVDF/LLDPE blends: correlation between rheology and morphology, A. Jameie Oskooie& M. K. Razavi Aghjeh& O. Rafeie & A. Tavakoli, J Polym Res (2017) 24: 21. doi:10.1007/s10965-017-1183-x

- Conductive Poly(vinylidene fluoride)/Polyethylene/Graphene Blend-Nanocomposites; Relationship between Rheology, Morphology and Electrical Conductivity, O. Rafeie, M. K. Razavi Aghjeh, A. Tavakoli, M. Salami Kalajahi and A. Jameie Oskooie, Journal of Applied Polymer Science, DOI: 10.1002/app.46333-Feb.2018

- Effect of Graphene Nano-Platelets (GnPs) on Crystalline Structure of Poly(Vinylidene Fluoride)/Polyethylene (PVDF/PE) Blends, O. Rafeie, M. K. Razavi Aghjeh, A. Tavakoli, M. Salami Kalajahi , A. Jameie Oskooie,M. Ghayumi, Polymer Composites. 2019;1–14. DOI: 10.1002/pc.25302

- Effect of carbon fiber, Nano clay and Flame retardant to enhance ablative properties of EPDM-based insulators, O.Rafeie & A. Kebritchi, submitted to journals of advance polymer science and technology, 2024

- O. Rafeie, M.K. Razavi Aghjeh, A. Tavakoli Araghi, M.Mehrabi Mazidi , S.Hajbabazadeh, Effect of matrix and dispersed phase modification on the partitioning of clay in PP/PS blends, ISPST 2012 conference, Amirkabir University of Technology, Tehran, Iran, October, 2012. Accepted for **Oral presentation**

- S. Hajbabazadeh, M.K. Razavi Aghjeh, F. Abbasi, O. Rafeie, M. Mehrabi Mazidi, Rheology and morphology of in-situ compatibilized PP/PE/PS ternary polymer blends via Friedel-Crafts alkylation reaction: PP-matrix. ISPST 2012 conference, Amirkabir University of Technology, Tehran, Iran, October, 2012. Accepted for **Oral presentation**

- امید رافعی دونیقی، میرکریم رضوی آقجه، اکرم توکلی عراقی، تاثیر اصلاح کننده های فاز ماتریس و پراکنده بر روی موقعیت قرارگیری نانورس در آلیاژهای پلی پروپیلن/پلی استایرن، همایش و کارگاه ملی علوم و فناوری نانو، اردیبهشت ۱۳۹۲.- پوستر

- Golabi, M.K. Razavi Aghjeh*, M. Salami Hosseni, O. Rafeie Effect of PE-g-MA on the Friedel–Crafts (FC) Alkylation Reaction in Polyethylene/Polystyrene Blends, H.R. The 8th international chemical engineering congress and exhibition, (ICHEC), February 2014.

- O. Rafeie, M.K. Razavi Aghjeh, A. Tavakoli Araghi, M.Mehrabi Mazidi, Compatibilization of PP/PS Blends via a Novel Acylation Reaction, ISPST 2014 conference. Tehran, Iran, October, 2014. Accepted for Oral presentation.

- O. Rafeie, A. Kebritchi ,The Effect of Chopped Carbon Fiber on Ablative Behaviour of EPDM Based Elastomeric Insulation, 15th International Seminar on Polymer Science and Technology, 2022, poster presentation