RÉSUMÉ

Sherwin Karami

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Career Objectives

A team-oriented and resourceful polymer engineer with outstanding communication skills experienced in production troubleshooting, experimental research and innovative development, project supervision and management, analytical formulation and characterization.

Professional skills

- Experienced in working and building relationships with cross-functional groups
- Driven individual with creative thinking and problem-solving capabilities
- Deep understanding and experience of material testing, failure modes, and effects analysis.
- Extensive experience in writing scientific/technical reports.

Work Experience

Project Manager **2018-Now**

Solution Craves Inc.

Key Achievements

- Managing a project concerning the sustainable modification of asphalt using polymer nanocomposites targeting the mitigation of deteriorating influence of climate change on the road pavements, improving the in-service life in a start-up company.

Industrial Liaison **2015-2018**

École Polytechnique de Montréal

Key Achievements

- Performed Processing and Product Troubleshooting of Multilayer Firehoses by Commercial-grade Thermoplastic Polyurethanes.
- Developed a New and Affordable Material for Selective Laser Sintering 3D printers.
- Designed Anti-bacterial Membranes with a Reduced Biofouling Potential for Wastewater Treatment using the Membrane Bioreactor.
- Performed risk assessments for different clients and proposed changes to the current procedures
- Visiting Lecturer: Applied Rheology at CIQA, Mexico
- Visiting Lecturer: Polymer Physics at CICATA-IPN, Mexico

Graduate Research Assistant **2010-2015**

École Polytechnique de Montréal

Key Achievements

- Concrete knowledge of polymer physics, chemistry, polymer nanotechnology, and various polymer processing techniques.
- Improved the ductility and oxygen barrier properties of biodegradable polymeric casting films for food packaging applications.
- Performed design characterization and developed design verification and validation plans.

Project Manager **2008-2010**

Hegmataneh Industries Petrochemical Company (HIPC)

Key Achievements

- Implemented an Engineer training program and re-designing the polymerization reactor, and Wet Scrubber
- Performed a Feasibility Study of a chlorine Alkaline/VCM unit using Membrane Electrolysis

R&D Research Officer **2007-2008**

Bandar Imam Petrochemical Complex (BIPC)

Key Achievements

- Optimized the Design of Suspension Polymerization Reactor of PVC, through developing a kinetic-dynamic model to simulate the particle size distribution in PVC suspension polymerization reactor

Chemical Engineering Internships **2006**

Bandar Imam Petrochemical Complex, Research, and Improvement

Key Achievements

- Accomplished a troubleshooting project regarding the clogged inlet pipes of Vinyl Chloride Monomer into the PVC suspension reactor.

Academic Background

Doctor of Philosophy (Ph.D.), Chemical Engineering Department **2010-2015**

École Polytechnique de Montréal

Master of Science (M. Sc.), Polymer Engineering Department **2006-2009**

Amirkabir University of Technology (AUT)

Bachelor of Science (B. Sc.), Polymer Engineering Department **2002-2006**

Amirkabir University of Technology (AUT)

Teaching Experience

Teacher Assistant: Rheology at Amirkabir University of Technology (AUT) **2007-2008**

Tutorial: Transport Phenomena **2013-2015**

Tutorial: Polymer Processing **2013-2015**

Community Involvement

- **Tax Clinique Coordinator** at Conseil Communautaire de NDG **2018-2019**
- **Organizer of Senior Gathering Program** at Conseil Communautaire de NDG **2017-Now**
- **CANADA 101:** Preparation for the Canadian citizenship exam **2018**

Language Skills

- English (Fluent Level)
- French (Conversational Level)

Research Contribution

Recent Journal Publications

- Role of chain dynamics and topological confinements in cold crystallization of PLA-clay nanocomposites.
- Toughening of polylactide nanocomposites with an ethylene alkyl acrylate copolymer: Effects of the addition of nanoparticles on phase morphology and fracture mechanisms.
- Effect of strain-induced molecular ordering on mechanical performance and barrier properties of polylactide nanocomposites.
- Dispersion and exfoliation of nanoclays in itaconic acid functionalized LDPE by ultrasound treatment.
- Influence of modified polyethylene compatibilizer on filler dispersion and flammability characteristics of linear low-density polyethylene/cycloolefin copolymer blends containing flame retardant combinations.
- Enhancement of crystallinity and toughness of poly (l-lactic acid) influenced by Ag nanoparticles processed by a twin-screw extruder.

Consultation Reports

- A Review: Anti-bacterial Membranes with a Reduced Biofouling Potential for Wastewater Treatment using the Membrane Bioreactor
- Surface Treatment of Polypropylene Using Corona-induced Electron Avalanche for 3D Printing Applications.
- Design and Implementation of a Corona-induced Fluidized-bed Reactor for Surface Modification of Polymer Fine Powders at a Controlled Atmosphere.
- The Origin of the Gel-like Blister Defects in the Commercial-grade Thermoplastic Polyurethanes Extruded Firehoses.
- Sustainable processing of Firehoses by the Commercial-grade Thermoplastic Polyurethanes using a Single Screw Extruder upon a Sudden Interruption.

Research Project Supervision

- Available upon Request.

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