

KAAN GUNES, Ph.D.

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OBJECTIVE: To secure a project/product manager role in new process and product development groups

CAREER HIGHLIGHTS:

- PhD in Polymer Engineering with R&D Project Management experience in Tire & Rubber Reinforcement Materials Industry
- Six Sigma Black Belt and Design for Six Sigma Certification; Project Management training and professional experience
- Experienced in compounding of plastics and rubbers for the development of advanced polymer composites and blends
- Experienced in design and scale-up of polymer compounding, injection molding and fiber spinning processes
- Experienced in the rheological, thermal, mechanical, morphological and spectroscopic characterization of polymeric systems
- Skilled in leading multinational, cross-functional, and interdisciplinary teams in development of new products and processes

EDUCATION

THE UNIVERSITY OF AKRON

Akron, OH, USA

Ph.D., Polymer Engineering

Aug 2004-Sep 2009

Advisor: Dist. Prof. Avraam I. Isayev

Dissertation: "In-Situ Ultrasonic Compatibilization of Binary Blends of Flexible Chain and Liquid Crystalline Polyesters"

BOGAZICI UNIVERSITY

Istanbul, Turkey

B.S., Chemical Engineering

Sep 2000-Jun 2004

PROFESSIONAL EXPERIENCE

KORDSA GLOBAL

Kocaeli, Turkey

Project Leader in New Product and Process Development Platform, Global R&D Center

Oct 2009-present

- Lead four major projects on the development of novel yarns and tire cords for the reinforcement of high performance tires
- Scale up yarn production for the commercialization of new tire cords with improved dimensional stability (DS) and tenacity
- Employ Six Sigma DFSS methodologies to reduce customer concerns by planning new, and improving existing processes
- Analyze feasibility of R&D projects, and lead all project development stages from budgeting to commercial production
- Secured \$1M in grants from Sci. & Tech. Research Council of Turkey for two new product development projects in 2010
- Reduce cost of scale up from lab to pilot plant by developing a low throughput pilot yarn spinning and drawing unit
- Build lab and pilot scale monofilament lines for the production of monofilaments for tire reinforcement and other markets
- Optimize fiber twisting parameters and tire cord dipping recipes to maximize DS of new fibers and their adhesion to rubber
- Lead polymer nanocomposites compounding and fiber spinning studies for the development of novel technical yarns
- Lead the lab and pilot scale solid state polymerization (SSP) kinetics studies of new fiber grade polyesters and their blends
- Advise implementation of new technologies for improving product quality and process efficiency in existing fiber plants
- Conduct equipment and process FMEA studies during the design and start-up of new processes and plant equipment
- Facilitate the purchasing of new polymer processing and characterization equipment, and aid in the formation of their SOPs

THE UNIVERSITY OF AKRON

Akron, OH, USA

Graduate Research Assistant, Department of Polymer Engineering

Aug 2004-Aug 2009

- Developed advanced polymer composites by ultrasonically dispersing nanofillers in high performance polymer matrices
- Devulcanized commercial ground tire rubbers in lab scale ultrasonic extruders and optimized related process parameters
- Created in-situ reinforced composites of exceptional strength and stiffness by blending LCPs in a novel ultrasonic extruder

- Compatibilized immiscible polyester blends by ultrasonically-aided reactive extrusion and characterized reaction products
- Scaled up the ultrasonic rubber devulcanization process for commercial production by designing and overseeing the manufacture of a 250 lb/hr capacity ultrasonic rubber extruder
- Optimized compounding and injecting molding of novel polymer composites in numerous company research projects
- Managed and maintained four thermoplastic and rubber injection molding machines and licensed individuals to operate
- Designed ultrasonic single screw extruder with special screw, fiber spinning/film casting dies, and data acquisition system
- Characterized polymeric systems by rheological, thermal, mechanical, spectroscopic and morphological methods, and x-ray

BASF AG

Ludwigshafen, Germany

Intern, Acronal® Polymer Dispersions Product Development Laboratory

Aug-Sep 2003

- Optimized recipes of dispersions by experimental design of product trial batches, their synthesis, and characterization
- Investigated operations of Pevicoat® polymer coatings and large scale automated polymer dispersion plants

BASF SEAL SANDS

Teesside, UK

Intern, Production and Utilities Departments

Jun-Jul 2003

- Led a hazards and operations study; updated procedures and process drawings; investigated safety with responsible care team
- Investigated operations of acrylonitrile, adiponitrile and hexamethylenediamine monomer production plants

BASF-TURK

Gebze, Turkey

Intern, Production, Utilities, Wastewater Treatment and Quality Control Units

Aug-Sep 2002

- Investigated operations of polymer dispersions plant; performed characterizations on commercial line of polymer coatings

TECHNICAL SKILLS

Languages

- English, German, Turkish

Computer Skills

- **Engineering:** AutoCAD, ChemCad, ProE, Data acquisition systems (LabVIEW, Dataq), SAP R/3
- **Statistics:** Minitab, Jmp, SAS, SPSS, Sigmaplot, Origin
- **Programming:** Fortran, C+, Matlab, Visual Basic, Mathematica (Windows, UNIX, Linux environments)
- **Office:** MsProject, OpenOffice, MsOffice, Lotus Notes

Technical Trainings and Certifications

- Six Sigma Black Belt & Design for Six Sigma Certification (Matris Consulting, Oct 25 2010-Feb 1 2011)
- Ms Project Server—Project Management (Rota Engineering Consultancy, scheduled Jan 20-21 2011)
- Process Safety and Risk Management (Kordsa Global, scheduled Jan 19 2011)
- Distribution, Market Power & Investigations (LawInContext, Baker & McKenzie, Jan 11 2011)
- Cartels & Dealing with Competitors (LawInContext, Baker & McKenzie, Dec 10 2010)
- Quality Function Deployment (Kordsa Global, Sep 20 2010)
- Blue Ocean Strategy (Kordsa Global, Aug 25-26 2010)
- Lean Six Sigma Green Belt Certification (Matris Consulting, Mar 3-Jul 31 2010)
- Project Management (Project Management Institute accredited, Mentor Consulting, May 31-Jun 3 2010)
- Emotional Intelligence (Rubikon Consulting, May 11 2010)
- Organizational Culture (Kordsa Global, Apr 22 2010)
- Process Management (Kordsa Global, Mar 9 2010)
- ISO 9001 (Kordsa Global, Feb 12 2010)

AWARDS AND ACTIVITIES

- Co-organizer, PPS 2010 Europe/Africa Regional Meeting (scheduled Oct 2010) in Istanbul, Turkey, SPE Thermoplastic Elastomers (Sep 2007) and Polymer Display Technologies (Oct 2006) Topical Conferences in Akron, OH
- Affiliated with American Chemical Society (ACS) (Jan 2010-present), Society of Plastics Engineers (SPE) (2004-present), ASTM International (2004-present), and Academy of Model Aeronautics (AMA) (2007-present)
- Served on Society of Plastics Engineers (SPE) Akron Section board of directors, and the education committee, 2005-2009
- Best Poster at 25th Anniversary of the Polymer Engineering PhD Program, Akron, OH, Aug 7 2008
- Best Paper at CUGSR Research Conference, Akron, OH, Feb 15 2007
- Outstanding Student Leader Award, University of Akron, 2006
- Led UAkron SPE Student Chapter into winning Education and Chapter Excellence (STRETCH) Awards as president, 2006
- Design and build high performance composite model sailplanes with aramid, carbon and glass fiber layups, 2008-present
- Hobbies include international travel, hiking, swimming, tennis, skiing, sailing, and flying radio controlled model aircraft

PUBLICATIONS IN REFEREED JOURNALS & CONFERENCE PROCEEDINGS

1. **K. Gunes**, A. I. Isayev, "In-Situ Ultrasonic Compatibilization of PEN/LCP Blends," submitted to *Journal of Applied Polymer Science*, Manuscript Id: APP-2010-11-3774, Dec 2010
2. **K. Gunes**, A. I. Isayev, "Ultrasonically-Aided Extrusion of Blends of Two Thermotropic LCPs," *Polymer Science*, Ser. A, 52, 11, 1124-1136, 2010
3. **K. Gunes**, A. I. Isayev, "In-Situ Ultrasonic Compatibilization of PEN/LCP Blends," *Proc. SPE ANTEC*, 2010
4. **K. Gunes**, A. I. Isayev, "Ultrasonically-Aided Extrusion of Blends of Two Thermotropic LCPs," *Proc. SPE ANTEC*, 2010
5. **K. Gunes**, A. I. Isayev, "Effects of Ultrasonically-Aided Extrusion on the Structure and Properties of PET, PEN and Copolymerization of Their Blends," *ACS Polymer Materials Science and Engineering Division Preprints*, 2010
6. **K. Gunes**, A. I. Isayev, X. Li, C. Wesdemiotis, "Fast In-Situ Copolymerization of PET/PEN Blends by Ultrasonically-Aided Extrusion," *Polymer*, 51, 1071-1082, 2010
7. **K. Gunes**, A. I. Isayev, "Ultrasonic Treatment of PET/LCP Blends during Extrusion," *Int. J. of Polym. and Technol.*, 1, 1-15, 2009
8. **K. Gunes**, A. I. Isayev, "Ultrasonically-aided Extrusion of PEN/LCP Blends," and "Fast Copolymerization of PEN/PET Blends during Ultrasonically-aided extrusion," *Proc. SPE ANTEC*, 2009
9. A. I. Isayev, C. D. Jung, **K. Gunes**, R. Kumar, "Ultrasound Assisted Single Screw Extrusion Process for Dispersion of Carbon Nanofibers in Polymers," *International Polymer Processing*, 23, 4, 395-405, 2008
10. A. I. Isayev, R. Kumar, T. Lewis, **K. Gunes**, "Novel Process for Manufacturing of Polymer Nanocomposites," *NanoTR4*, 2008
11. A. I. Isayev, R. Kumar, C. D. Jung, T. Lewis, **K. Gunes**, "Theoretical and Experimental Studies of Novel Process for Compounding of Carbon Nanotubes and Nanofibers in Polymer Melts" *Proc. NSF CMMI Research Conference*, 2008
12. A. I. Isayev, C. D. Jung, **K. Gunes**, "Ultrasound Assisted Single Screw Extrusion Process for Dispersion of Carbon Nanofibers in Polymers," *Proc. SPE ANTEC*, 1533-7, 2007
13. **K. Gunes**, A. I. Isayev, "Continuous Ultrasonic Process for Preparation of PET/LCP Blends," *Proc. SPE ANTEC*, 449-53, 2007

PRESENTATIONS AT NATIONAL AND INTERNATIONAL CONFERENCES

1. **K. Gunes**, A. I. Isayev, "In-Situ Compatibilization of PEN/LCP Blends by Ultrasonically-Aided Extrusion," PPS 2010 Istanbul, Turkey, Oct 21 2010 (talk)
2. **K. Gunes**, A. I. Isayev, "In-Situ Ultrasonic Compatibilization of PEN/LCP Blends," ANTEC 2010, Orlando, FL, May 18 2010 (poster)
3. **K. Gunes**, A. I. Isayev, "Ultrasonically-Aided Extrusion of Blends of Two Thermotropic LCPs," ANTEC 2010, Orlando, FL, May 17 2010 (talk)

4. **K. Gunes**, A. I. Isayev, "Effects of Ultrasonically-Aided Extrusion on the Structure and Properties of PET, PEN and Copolymerization of Their Blends," ACS Spring 2010 National Meeting & Exposition, San Francisco, CA, Mar 25 2010 (talk)
5. **K. Gunes**, A. I. Isayev, "Ultrasonically-aided Extrusion of PEN/LCP Blends," SPE ANTEC at NPE 2009, Chicago, IL, June 24 2009 (talk)
6. **K. Gunes**, A. I. Isayev, "Enhanced Copolymerization of PEN/PET Blends During Ultrasonically-aided Extrusion," SPE ANTEC at NPE 2009, Chicago, IL, June 24 2009 (talk)
7. **K. Gunes**, A. I. Isayev, "Ultrasonic Treatment of Blends Containing Two Liquid Crystalline Polymers During Extrusion," CUGSR Research Conference, UAkron, Akron, OH, Mar 26 2009 (talk)
8. **K. Gunes**, A. I. Isayev, "Ultrasonically-aided Extrusion of Blends of Polyesters and Thermotropic Liquid Crystalline Polymers," Dept. of Polymer Eng. Spring 2009 Seminar Series, UAkron, Akron, OH, Feb 27 2008 (invited speaker)
9. **K. Gunes**, A. I. Isayev, "Ultrasonic Treatment of PEN/LCP Blends During Extrusion," ACS Rubber Division 174th Tech. Meeting, Louisville, KY, Oct 15 2008 (talk)
10. R. Kumar, C. Jung, A. I. Isayev, **K. Gunes**, "Novel Process for Compounding Carbon Nanotubes and Nanofillers in polymer Melts," 25th Anniversary of the Polymer Eng. Program, UAkron, Akron, OH, Aug 7 2008 (best poster award winner)
11. **K. Gunes**, A. I. Isayev, "Ultrasonic Extrusion of PEN/LCP Nanocomposites," 25th Anniversary of the Polymer Eng. Program, UAkron, Akron, OH, Aug 7 2008 (poster)
12. **K. Gunes**, A. I. Isayev, "Ultrasonic Extrusion of PEN/LCP Nanocomposites," Polymer Innovation Northeast Ohio (PINO), Case Western Reserve University, Cleveland, OH, Jun 27 2008 (poster)
13. **K. Gunes**, A. I. Isayev, "Ultrasonic Treatment of PEN/LCP Blends During Extrusion," CUGSR Research Conference, UAkron, Akron, OH, Mar 27 2008 (talk)
14. **K. Gunes**, C. Jung, A. I. Isayev, "Ultrasonic Dispersion of Carbon Nanofibers in Polymers," NSF CMMI 2008 Research and Innovation Conference, Knoxville, TN, Jan. 7-10 2008 (poster)
15. A. I. Isayev, R. Kumar, C. Jung, T. Lewis, **K. Gunes**, "novel Process for Compounding Carbon Nanotubes and Nanofibers in polymer Melts," NSF CMMI 2008 Research and Innovation Conference, Knoxville, TN, Jan. 7-10 2008 (poster)
16. **K. Gunes**, A. I. Isayev, "Continuous Ultrasonic Process for Preparation of PET/LCP Blends," SPE ANTEC 2007, Cincinnati, OH, May 8 2007 (talk)
17. **K. Gunes**, A. I. Isayev, "Continuous Process for Dispersion of Nanocomposites in Polymers," PINO, Case Western Reserve University, Cleveland, OH, Mar 31 2007 (poster)
18. **K. Gunes**, A. I. Isayev, "Ultrasound Assisted Single Screw Extrusion Process for Dispersion of Carbon Nanofibers in Polymers," CUGSR Research Conference, UAkron, Akron, OH, Feb 15 2007 (talk)
19. **K. Gunes**, C. Jung, A. I. Isayev, "Continuous Process for Dispersion of Nanofibers in Polymers," Alumni Day, UAkron, Akron, OH, Oct 27 2006 (poster)