

## **JUAN PAULO HINESTROZA, Ph.D.**

CORNELL UNIVERSITY

Department of Fiber Science & Apparel Design

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Juan P. Hinestroza, a U.S. Fulbright Scholar, is a tenured Associate Professor of Fiber Science and directs The Textiles Nanotechnology Laboratory at the College of Human Ecology of Cornell University in Ithaca, NY. Professor Hinestroza obtained a Ph.D. from the Department of Chemical and Biomolecular Engineering at Tulane University and B.Sc. in Chemical Engineering from Universidad Industrial de Santander. Prior to pursuing doctoral studies, Professor Hinestroza worked as a process control engineer for The Dow Chemical Company. Hinestroza is a certified PMP®.

Professor Hinestroza works on understanding fundamental phenomena at the nanoscale that are of relevance to Fiber and Polymer Science. *Hinestroza has received over 8.1 MM USD in research funding* (Federal and State agencies as well as Industrial Consortiums) for his pioneering work in exploring new pathways for creating multifunctional fibers via manipulation of nanoscale phenomena.

Professor Hinestroza has been the recipient of a myriad of awards including the *National Science Foundation CAREER Award*, the *J.D. Watson Young Investigator Award* from NYSTAR and the *Educator of the Year Award* from the Society of Professional Hispanic Engineers as well as *Humanitarian Award* from the National Textile Center. Professor Hinestroza has delivered invited lectures worldwide at Universities and Research Centers in Argentina, Australia, Austria, Brazil, Canada, Chile, China, Colombia, Costa Rica, Croatia, Czech Republic, Finland, France, Germany, Guatemala, Honduras, Hungary, India, Italy, Japan, Mexico, Morocco, New Zealand, Peru, Phillipines, Portugal, Puerto Rico, Romania, Singapore, Slovenia, South Korea, Spain, Switzerland, Taiwan, Thailand, The Netherlands, Turkey, United Arab Emirates, United Kingdom and Vietnam. In addition, Professor Hinestroza has received visiting scientist fellowships from The Chubu Foundation for Science and Technology of Japan, The National Council for Scientific and Technological Development in Brazil and The Swiss National Science Foundation.

Professor Hinestroza's scientific work has been featured in *Nature Nanotechnology*, *MRS Bulletin*, *Materials Today*, *C&E News*, *National Geographic*, *ASEE Prism* as well as mainstream media outlets such as *CNN*, *Wired*, *TechReview*, *The Guardian*, *Popular Science*, *ABC News*, *NYTimes*, *Reuters*, *PBS*, *NPR* and *BBC*. In addition to his scientific endeavors, Professor Hinestroza and his research group are actively involved in community outreach activities aimed at increasing the number of members from underrepresented minority groups in Science, Technology, Engineering and Mathematics as well as engaging senior citizens in collaborative and inter-generational learning experiences.

### **EDUCATION**

May 2002

#### **Ph.D. Chemical and Biomolecular Engineering**

Tulane University New Orleans, LA. Advisor: Daniel De Kee

Dissertation: Mass Transfer Through Elongated Membranes. Effect of Mechanical deformation on the barrier properties of polymeric materials.

*Research funded by the US Department of Defense and Department of Energy*

June 1995     **B.Sc. Chemical Engineering**  
Universidad Industrial de Santander,  
Honor Thesis: Optimization of the cooling fluids and process water systems of Dow Chemical's polystyrene production units at Cartagena, Colombia.  
*Thesis funded by The Dow Chemical Company*

### **HONORS AND AWARDS**

Feb 2017	Academic Innovation Award- Cornell Class of 1972
Jun 2014	U.S. Fulbright Scholar
Jan 2014	Visiting Professor Brazilian Council for Science&Technology, Florianapolis, Brazil
Dec 2013	Visiting Fellow Chubu Foundation for Science and Technology, Ueda, Nagano, Japan
Jan 2012	Visiting Fellow Swiss National Science Foundation, ETH- EMPA, St. Gallen, Switzerland
Nov 2008	Educator of the Year Award. Society of Professional Hispanic Engineers
Apr 2007	National Science Foundation Early CAREER Development Award
Oct 2006	National Textile Center Humanitarian Award
July 2005	NYSTAR James D. Watson Young Investigator Award
Feb 2001	Omega Chi Epsilon Award- Honor Society of Chemical Engineering
Nov 2001	Tulane University Outstanding Teaching Assistant of the Year.
Nov 1999	Tulane University Outstanding Teaching Assistant of the Year.
Nov 1998	Tulane University Outstanding Teaching Assistant of the Year.
Jan 1998	Graduate Studies Scholarship. Tulane University.
Jun 1995	Outstanding Honors Thesis of the Year. Universidad Industrial de Santander
Jan 1994	Undergraduate Thesis Scholarship- The Dow Chemical Company

### **ACCREDITATION AND MEMBERSHIPS IN PROFESSIONAL SOCIETIES**

- Certified Project Management Professional (Since 2018) PMI#
- Member of the American Chemical Society (Since 1999)
  - Member of the Executive Committee of the ACS Division of Cellulose and Renewable Materials 2006-2011
  - Symposium Organizer for ACS National Meeting- Cellulose Division 2006-2010
- Member of the Society of Rheology (Since 1998)
- Member of the American Institute of Chemical Engineers (Since 1998)
- Member of the Society of Hispanic Professional Engineers (Since 2000)
- Member of the Fiber Society (Since 2003)
- E.I.T. Registered with the Board of Professional Engineers of the State of California (Since 1997)
- Alpha Gamma Sigma Honor Society (Since 1997)
- Omega Chi Epsilon Honor Society (Since 1998)

### **PROFESSIONAL EMPLOYMENT**

#### **Visiting Professor Appointments**

Jun 2014 – Sept 2014	Visiting Professor	EAFIT University ( <b>Colombia</b> )
May 2014-Jun 2014	Visiting Professor	Federal University of Santa Catarina ( <b>Brazil</b> )
Dec 2013 – Feb 2014	Visiting Professor	Shinshu University ( <b>Japan</b> )
May 2013 – Aug 2013	Visiting Professor	Aalto University ( <b>Finland</b> )
Aug 2012 – Dec 2012	Visiting Professor	Seoul National University ( <b>Republic of Korea</b> )
Jan 2012 – July 2012	Visiting Scientist	EMPA ETH Eidgenössische Materialprüfungs- und Forschungsanstalt. ( <b>Switzerland</b> )

### **Academic Appointments**

Jul 2011 - Current	Associate Professor with tenure	Cornell University
Jan 2006 – Jun 2011	Assistant Professor	Cornell University
Aug 2003 - Dec 2005	Assistant Professor	North Carolina State University
May 2002 - Aug 2003	Postdoctoral Fellow	Tulane Institute for Macromolecular Eng. & Sci.
Jan 1998 - May 2002	Teaching and Research Assistant	Tulane University
Jun 1994 - Dec 1997	Process Control Engineer	The Dow Chemical Company

### **INDUSTRIAL EXPERIENCE**

- Jun 1994- Dec 1997     **THE DOW CHEMICAL COMPANY**  
**Project Manager and Process Control Engineer**
- Managed improvement projects for US\$1,250,000 per year at a Polystyrene Production Unit.
  - Programmed process control computers for two polystyrene production units (100,000 tons per year).
  - Represented Latin America as a member of a global team for improvement in areas of polymerization, competitive analysis, and advanced process control strategies for the Polystyrene business.

- Jan 2016- Current     **JPH Scientific Consulting, LLC**  
**Owner**
- Consulting services on textile advanced manufacturing, textile metrology and synthesis and processing of fibrous materials.
  - Provided consulting services to Fortune50 companies and top educational and research institutions on advanced textile manufacturing
  - Interacted with over 60 textile manufacturing facilities on 4 continents- fiber and yarn manufacturers. Also equipment manufacturers specialized in knitting, weaving, braiding, nonwovens, dyeing, finishing, printing and assembly of textiles and electronic components.

### **ACADEMIC EXPERIENCE**

- Jul 2011- Current     **CORNELL UNIVERSITY**  
**Associate Professor with Indefinite Tenure**
- **Recipient of the U.S. Fulbright Fellowship**
  - **Recipient of the a visiting professor fellowship from the Council of Science and Technology of Brazil**
  - **Recipient of a visiting professor fellowship from the Chubu Foundation in Japan**
  - **Recipient of a visiting professor fellowship from the Swiss National Science Foundation**
  - Awarded over 1.8 MM in external financial support for research in smart textiles and nanotechnology
  - Member of the Atkinson Center for Sustainable Future, Cornell Center for Materials Research and Cornell Entrepreneurship
  - Actively involved in interdisciplinary research across campus (CBE, MAE, BME, PHYS, CHEM)
  - Actively involved in community outreach initiatives for K-12, High School Teachers, Community Colleges, underrepresented minority groups and senior citizens.

- Sep 2015- June 2017     **CORNELL UNIVERSITY**  
**Director of Undergraduate Studies- Fiber Science & Apparel Department**

- Responsible for managing recruitment and retention of 100 undergraduate students in 2 different majors (fiber science; fashion design management)
- Working along the office of admissions and office of development to increase the profile of the Fiber Science & Apparel Design program among parents and potential students
- Planning and Scheduling of undergraduate and graduate courses at the FSAD department

Jul 2013 – Sep 2015

**CORNELL UNIVERSITY**

**Director of Graduate Studies – Fiber Science and Apparel Design**

- Designed and implemented a 5-year plan to secure/monitor funding of graduate students
- Managed the Masters and Doctoral programs at FSAD (40 students) and worked along the Cornell Graduate School to guarantee compliance with federal and state guidelines.

Jan 2006- Jun 2011

**CORNELL UNIVERSITY**

**Assistant Professor**

- **Recipient of the NSF Early CAREER Development Award**
- **Recipient of the SHPE Educator of the Year Award**
- **Recipient of the NYSTAR James D. Watson Young Investigator Award**
- Awarded over 3.1 MM in external financial support for research in smart textiles and nanotechnology
- Actively involved in recruitment of underrepresented minority graduate and undergraduate students
- Developed a new graduate course on Rheology of Solids
- Redesigned an undergraduate course of Textiles Apparel and Innovation involving the participation of community elders for intergenerational learning
- Actively involved in interdisciplinary research across campus (CBE, MAE, BME, PHYS, CHEM)
- Member of the CCMR Cornell Center for Materials Research
- Actively involved in community outreach initiatives for K-12, High School Teachers, Community Colleges, underrepresented minority groups and senior citizens.
- Worked with public media (NPR and PBS) to produce Radio and TV segments aimed at increasing awareness of science and nanotechnology among the general public

Aug 2003- Dec 2005

**NORTH CAROLINA STATE UNIVERSITY**

**Assistant Professor**

- Awarded 2.1 MM in external financial support for research in smart textiles and nanotechnology
- Taught Polymer Engineering (TE/BME 463) and Fiber Science Courses and Labs (TE201/TE201L).
- Developed web-based interactive learning platforms for TE 463 and TE201 courses using Palm Pilots®.
- Research advisor for graduate students (5 MS and 1 Ph.D. students)
- Faculty Advisor for NC State Chapter of the Society of Hispanic Professional Engineers

May 2002- Aug 2003

**TULANE INSTITUTE FOR MACROMOLECULAR ENGINEERING AND SCIENCE**

**Postdoctoral Fellow**

- Performed research work and applied knowledge of polymer rheology (shear, capillary and optical rheometry) and thermo-mechanical analysis in the characterization of novel macromolecules and nanostructures.
- Planned and supervised graduate students research work in the area of polymer rheology.
- Purchased, installed and operated customized research grade polymer processing equipment.

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- Jan 1998- May 2002 **TULANE UNIVERSITY**  
**Research Assistant**
- **Recipient of the Omega Chi Epsilon Award for Excellence in Academic and Leadership skills in Chemical Engineering**
  - Designed, built and tested an apparatus to perform permeation experiments of organic chemicals through elongated polymeric materials.
  - Developed a data acquisition algorithm to resolve FTIR spectra in real time.
  - Worked in the development of a mathematical model for the permeation of organic compounds through polymeric materials.
  - Assisted in the preparation of grant proposals for NSF, DOD, and DOE.

- Jan 1998- Jan 2001 **TULANE UNIVERSITY**  
**Teaching Assistant**
- **3-times recipient of the Omega Chi Epsilon Outstanding Teaching Assistant**
  - Assisted with teaching activities for three undergraduate courses
  - Lectured on the use of process simulation software (ASPEN and HYSIS)
  - Managed course information using web based learning platforms.
  - Coached undergraduate students for the AIChE Design Competition

## **TEACHING EXPERIENCE**

### **At Cornell**

Fall 2016	FSAD3000	Introduction to Fiber Science Research
Fall 2016	FSAD4660	Textiles Apparel and Innovation
Fall 2016	FSAD6160	Rheology of Solids
Fall 2015	FSAD4660	Textiles Apparel and Innovation
Fall 2014	FSAD4660	Textiles Apparel and Innovation
Fall 2014	FSAD6160	Rheology of Solids
Fall 2013	FSAD4660	Textiles Apparel and Innovation
Fall 2013	FSAD6160	Rheology of Solids
Fall 2011	FSAD4660	Textiles Apparel and Innovation
Fall 2011	FSAD 6160	Rheology of Solids
Fall 2010	FSAD 4660	Textiles Apparel and Innovation
Fall 2010	FSAD 6390	Mechanics of Fibrous Systems
Fall 2009	FSAD 6160	Rheology of Solids
Fall 2009	FSAD 4660	Textiles Apparel and Innovation
Fall 2008	FSAD 4660	Textiles Apparel and Innovation
Fall 2007	FSAD 639	Mechanics of Fibrous Systems
Spring 2007	FSAD 616	Rheology of Solids
Fall 2007	FSAD 466	Textiles Apparel and Innovation
Fall 2006	TXA466	Innovation and Technology in Textiles

### **At NCSU**

Spring 2005	TE/BME 463	Polymer Engineering and Science
Fall 2004	TE201/201L	Fiber Science and Engineering
Fall 2003	TE/BME 463	Polymer Engineering

## Scientific Publications

### Refereed Journal Publications

- 81 Sanchez-Botero, L, Dimov, AV, Li, R., Smilgies, DM, **Hinestroza, JP**, In Situ and Real-Time Studies, via Synchrotron X-ray Scattering, of the Orientational Order of Cellulose Nanocrystals during Solution Shearing , *Langmuir* (2018). DOI: 10.1021/acs.langmuir.7b04403
- 80 Promphet, N., Rattanawaleedirojn, P., Siralermukul, K., Soatthiyanon, N., Potiyaraj, P., Thanawattano, C., **Hinestroza, JP**, Rodthongkum, N. Non-invasive textile based colorimetric sensor for the simultaneous detection of sweat pH and lactate, *Talanta* (2018), 15, 192, 424-430
- 79 Yu,Q., Kong, X., Ma, Y., Wang, R., Liu,Q., **Hinestroza,JP**, Wang, AX, Vuorinen, T. Multi-functional regenerated cellulose fibers decorated with plasmonic Au nanoparticles for colorimetry and SERS assays, *Cellulose* (2018). 25, 10, 6041-6053
- 78 Schelling, M., Otal. E., Kim, M., **Hinestroza, JP.**, Decomposition of acetaminophen using a natural cellulosic substrate decorated with a water-stable metal-organic framework, *Bioengineering* (2018), 5,1,1-14
- 77 Heinzl, T., Hinestroza, JP, Revolutionary textiles: a philosophical inquiry on electronic and reactive textiles, *Design Issues* (2018) In- press
- 76 Patino-Ruiz, D., Sanchez-Botero, L., **Hinestroza, JP.**, Herrera, A., Modification of Cotton Fibers with Magnetite and Magnetic Core-Shell Mesoporous Silica Nanoparticles, *Physica Status Solidi (a)* (2018). DOI: 10.1002/pssa.201800266
- 75 Rojas, S., Duarte, D., Mosquera, S., Salcedo, F., **Hinestroza, JP**, Husserl, J., Enhanced biosorption of Cr(VI) using cotton fibers coated with chitosan – role of ester bonds, *Water Science & Technology* (2018), DOI: 10.2166/wst.2018.284
- 74 Zhu, L., Wang, X., **Hinestroza, JP**, Naebe, M., Determination of the porosity in a bifacial fabric using micro-computed tomography and three-dimensional reconstruction, *Textile Research Journal* (2018) DOI: 10.1177/0040517517698987
- 73 Morales-Luckie, R., Gama-Lara, SA., Garcia-Orozco, I., **Hinestroza, JP.**, Argueta-Figueroa, L., Synthesis, Characterization and Catalytic Activity of Platinum Nanoparticles on Bovine Bone Powder - A novel support, *Journal of Nanomaterials* (2018) doi:10.1155/2018/6482186
- 72 Sanchez-Botero, L. Herrera, AP., **Hinestroza, JP.**, Oriented Growth of  $\alpha$ -MnO<sub>2</sub> Nanorods Using Natural Extracts from Grape Stems and Apple Peels, *Nanomaterials* (2017), 7,5, 117
- 71 Cherukupally,P., Acosta,EJ., **Hinestroza, JP.**, Bilton, AM., Park, CB., Acid–Base Polymeric Foams for the Adsorption of Micro-oil Droplets from Industrial Effluents, *Environmental Science & Technology* (2017), 51,15, 8552-8560
- 70 Carreño, A., Schott, E., Zarate, X., Manriquez, JM., Vega, JC., Mardones, M., Cowley, AH., Chavez,I., **Hinestroza, JP.**, Arratia-Perez, R. DFT studies on coordination models for adsorption essays of Cu (II) and Ni (II) solutions in modified silica gel with iminodiacetic groups, *Chemical Papers* (2017), 6,1,1-12
- 69 Alzate-Sanchez, D.M., Smith, Brian J., Alsbaiee, A., **Hinestroza, JP.**, Dichtel, W., Cotton Fabric Functionalized with a  $\beta$ -Cyclodextrin Polymer Captures Organic Pollutants from Contaminated Air and Water, *Chemistry of Materials* (2016) 28 (22), 8340-8346
- 68 Otal, E., Kim, ML., Calvo, ME., Karvonen,L., Fabregas, IO., Sierra, CA., **Hinestroza, JP.**, A panchromatic modification of Metal-Organic Frameworks' light absorption spectra. *Chemical Communications* (2016) 52 (40), 6665-6668
- 67 Ospina-Orejarena, A., Vera-Graziano, R., Castillo-Ortega, M, **Hinestroza,JP.**, Rodriguez-Gonzalez, M., Palomares-Aguilera,L., Morales-Motezuma, M., Maciel-Cerda, A., Grafting Collagen on Poly (Lactic Acid) by a Simple Route to Produce Electrospun Scaffolds, and Their Cell Adhesion Evaluation *Tissue Engineering and Regenerative Medicine*, (2016) 13 (4), 375-387
- 66 Morales-Luckie, R., Lopezfuentes-Ruiz, AA., Olea-Mejia, O., Argueta-Figueroa, L., Sanchez-Mendieta, V., Brostow, W., **Hinestroza, JP**. Synthesis of silver nanoparticles using aqueous extracts of *Heterotheca inuloides* as reducing agent and natural fibers as templates: Agave lechuguilla and silk, *Materials Science and Engineering: C* (2016), 60, 429-436
- 65 Yetisen, A., Qu, H., Manbachi, A., Butt, H., Dokmeci, M., **Hinestroza, JP.**, Skorobogatiy, M.,

- Khademhosseini, A., Yun, SH, *ACS Nano* (2016), 10,3, 3042-3068
- 64 Agudelo, N., **Hinestroza, JP.**, Husserl, J., Removal of sodium and chloride ions from aqueous solutions using fique fibers (*Furcraea* spp.), *Water Science & Technology* (2016), 73,5,1197-11201
- 63 Casanas Pimentel, RG., Robles Botero, V., San Martin Martinez, E., Gomez Garcia, C., **Hinestroza, JP.**, Soybean agglutinin-conjugated silver nanoparticles nanocarriers for the treatment of breast cancer cells *Journal of Biomaterials Science Polymer Edition* (2016), 27,3, 218-234
- 62 Kimura, M., Shinohara, Y., Takizawa, J., Ren, S., Sagisaka, K., Lin, Y., Hattori, Y., **Hinestroza, JP.**, Versatile Molding Process for Tough Cellulose Hydrogel Materials, *Scientific Reports* (2015), 5, 16266 1-8
- 61 Kong, XM, Reza, M., Ma, Y., **Hinestroza, JP.**, Ahvenniemi, E., Vuorinen, T., Assembly of metal nanoparticles on regenerated fibers from wood sawdust and de-inked pulp: flexible substrates for surface enhanced Raman scattering (SERS) applications., *Cellulose* (2015) , 22(6) 3645-3655
- 60 Ovalle-Serrano, S., Carrillo, V., Blanco-Tirado, C., **Hinestroza, JP.**, Combariza, M.Y., Controlled synthesis of ZnO particles on the surface of natural cellulosic fibers: effect of concentration, heating and sonication., *Cellulose* (2015), 19(6) 1933-1943
- 59 Ozer, R., **Hinestroza, JP.**, One-step growth of isorecticular luminescent metal-organic frameworks on cotton fibers, *RSC Advances* (2015), 5 ,20, 15198-15204.
- 58 Rodriguez, H., Hinestroza, JP., Ochoa-Puentes, C., Sierra, C. Soto, C. Antibacterial activity against *Escherichia coli* of Cu-BTC (MOF-199) metal-organic framework immobilized onto cellulosic fibers *Journal of Applied Polymer Science* (2014), 131,19, 40815-40820
- 57 Zhukovskiy, M., Sanchez-Botero, LM, McDonald, MP, **Hinestroza, JP.**, Kuno, M. Nanowire-functionalized cotton textiles, *ACS Applied Materials and Interfaces* (2014), 6, 4, 2262-2269
- 56 Lange, L., Ochanda, F., Obendorf, SK, **Hinestroza, JP.**, CuBTC Metal-organic Frameworks Enmeshed in Polyacrylonitrile Fibrous Membrane Remove Methyl Parathion from Solutions *Fibers and Polymers* (2014), 15,2, 200-207
- 55 Luz, Priscilla, Silva, M., **Hinestroza, JP.**, Curcumin-Loaded Biodegradable Electrospun Fibers: Preparation, Characterization and Differences on the Fibers Morphology, *International Journal of Polymer Analysis and Characterization* (2013), 18-7, 534-544
- 54 Chacon-Patino, M., Blanco-Tirado, C., **Hinestroza, JP.**, Combariza, MY., Biocomposite of nanostructured MnO<sub>2</sub> and Fique fibers for efficient dye degradation *Green Chemistry* (2013), 15, 2920-2928.
- 53 Alzate-Sanchez, D., **Hinestroza, JP.**, Rodríguez, R., Sierra-Avila, C., Synthesis of the novel (E,E)-2,5-dimethoxy-1,4-bis[2-(4-ethylcarboxylate)styryl] benzene by the Heck reaction, *Synthetic Communications* (2013), 43,17,2280-2285
- 52 Song, J., Wang, C., **Hinestroza, JP.**, Electrostatic assembly of core-corona silica nanoparticles onto cotton fibers, *Cellulose* (2013), 20,4, 1727-1736
- 51 Nolasco-Arizmendi, V., Morales-Luckie, R., Sánchez-Mendieta, V., **Hinestroza, JP.**, Castro-Longoria, E., Vilchis-Nestor, AR, Formation of silk-gold nanocomposite fabric using grapefruit aqueous extract, *Textile Research Journal* (2013), 83, 12, 1229-1235.
- 50 Xiang, C., Taylor, A., **Hinestroza, JP.**, Frey MW., Controlled release of nonionic compounds from poly(lactic acid)/cellulose nanocrystal nanocomposite fibers, *Journal of Applied Polymer Science* (2013), 127,1, 79-86
- 49 Jiri, C. , **Hinestroza JP.**, Lukas, D., Production of Poly(vinylalcohol) Nanoyarns Using a Special Saw-like Collector, *Fibers & Textiles of Eastern Europe* (2013), 2,98,28-31
- 48 Bonilla, R., Montenegro, C., Ávila, A., **Hinestroza, JP.**, Direct observation of spatial distribution of charge of an electret polypropylene fiber using Electrostatic Force Microscopy, *Journal of Microscopy* (2012), 248, 3, 266-270
- 47 Mendoza-Bello, S., Morales-Luckie, RA., Flores-Santos, L., **Hinestroza, JP.**, Sanchez-Mendieta, V., Size-controlled synthesis of Fe<sub>2</sub>O<sub>3</sub> and Fe<sub>3</sub>O<sub>4</sub> nanoparticles onto zeolite by means of a modified activated-coprecipitation method: effect of the HCl concentration during the activation, *Journal of Nanoparticle Research* (2012),14,11, 1242-1251
- 46 Park, G., Jung, YL, Lee, GW, **Hinestroza, JP.**, Jeong, Y., Carbon Nanotube/Poly(vinyl alcohol) Fibers with a Sheath-core Structure Prepared by Wet Spinning, *Fibers and Polymers* (2012), 13,7,874-879

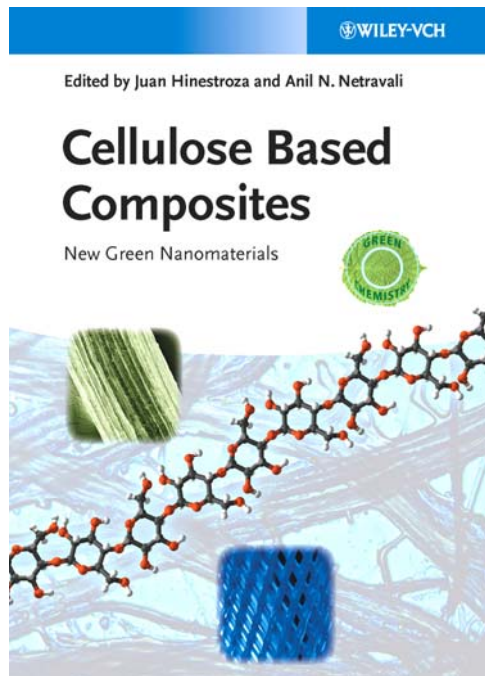
- 45 Castellanos, L., Blanco-Tirado C., **Hinestroza, JP.**, Combariza, M.Y., In-situ synthesis of gold nanoparticles using Figue natural fibers as template, *Cellulose* (2012), 19,6,1933-1943
- 44 Becerril-Juárez, I., Morales-Luckie, R., Ureña-Nuñez, F., Arenas-Alatorre, J., **Hinestroza, JP.**, Sánchez-Mendieta, V., Silver micro-, submicro- and nano-crystals using bovine bone as template. Formation of a silver/bovine bone composite (2012), *Materials Letters*, 85, 157-160
- 43 Silva da Pinto, M., Sierra-Avila, C., **Hinestroza, JP.**, In situ synthesis of a Cu-BTC metal–organic framework (MOF 199) onto cellulosic fibrous substrates: cotton, (2012), *Cellulose*, 19,5, 1771-1779
- 42 Gangadharan, S., Kuznetsov, A., Zhu, H., **Hinestroza, JP.**, Jasper, W., Modeling of Cross-Flow Across an Electrostatically Charged Monolith Filter, *Particulate Science and Technology*, (2012), 30, 5, 461-473
- 41 Barrera C, Herrera AP, Bezares N, Fachini E, Olayo-Valles R, **Hinestroza JP**, Rinaldi C., Effect of poly(ethylene oxide)-silane graft molecular weight on the colloidal properties of iron oxide nanoparticles for biomedical applications, *J Colloid Interface Science* (2012), 377, 40-50
- 40 Dabirian, F., Hosseini, S.A., **Hinestroza, JP.**, Abuzade, RA., Conformal coating of yarns and wires with electrospun Nanofibers, *Polymer Engineering and Science* (2012), 52,8, 1724-1732
- 39 Y. Li, Rojas, OJ, **Hinestroza, JP.**, Boundary Lubrication of PEO-PPO-PEO Triblock Copolymer Physisorbed on Polypropylene, Polyethylene, and Cellulose Surfaces, *Ind. Eng. Chem. Res.*, (2012), 51, 7, 2931–2940
- 38 Song, J., Birbach, N., **Hinestroza, JP.**, Deposition of silver nanoparticles on cellulosic fibers via stabilization of carboxymethyl groups, *Cellulose*, (2012), 19, 2, 411-424
- 37 Yu J-Y, Zheng N, Mane G, Min KA, **Hinestroza JP**, Zhu, H., Stringer, K., Rosania, G., A Cell-based Computational Modeling Approach for Developing Site-Directed Molecular Probes. *PLoS Comput Biol* (2012), 8,2: e1002378.
- 36 Mattana, G., Cosseddu, P., Fraboni, B., Malliaras, G., **Hinestroza, JP.**, Bonfiglio, A. Organic Electronics on natural cotton fibers, *Organic Electronics*, (2011) 12, 2033-2029
- 35 Li, Y, Liu, H., Song, J., Rojas, OJ., **Hinestroza, JP.**, Adsorption and Association of a Symmetric PEO-PPO-PEO Triblock Copolymer on Polypropylene, Polyethylene, and Cellulose Surfaces, *ACS Appl. Mater. Interfaces*, (2011),3,7, 2349-2357
- 34 Dabirian, F., Hosseini Ravandi, S.A., Hashemi Sanatgar, R., **Hinestroza, JP.**, Manufacturing of twisted continuous PAN nanofiber yarn by electrospinning process, *Fibers and Polymers* (2011) 12,5, 610-615
- 33 Kim, J., **Hinestroza, J.**, Jasper, W., Barber, R., Application of electrostatic force microscopy on characterizing an electret fiber: Effect of tip to specimen distance on phase shift , *Fibers and Polymers* (2011), 12,1,89-94
- 32 Flor, C, Hinestroza, J., Surface modification of polyester fabrics using low pressure air radio frequency plasma, *Journal of Fashion Design, Technology and Education* (2010), 1, 1-9
- 31 Gomez, A., Avila,A., **Hinestroza, J.**, Surface charge estimation on hemispherical dielectric samples from EFM force gradient measurements, *Journal of Electrostatics* (2010), 68,1, 79-84
- 30 Talwar, S., Arjun, K., **Hinestroza, J.**, Khan., S., Pourdeyihimi, B., Electrospun Nanofibers with Associative Polymer–Surfactant Systems, *Macromolecules*(2010), 43,18,7650-7656
- 29 Zhang, X., Zheng N., Zou, P., Zhu, H., **Hinestroza, J.**, Rosania, G., Cells on Pores: A Simulation-Driven Analysis of Transcellular Small Molecule Transport, *Molecular Pharmaceutics* (2010), 7,2,456-467
- 28 Kim, J., Jasper, W., Barker, R., **Hinestroza, J.**, Application of Electrostatic Force Microscopy on Characterizing an Electrically Charged Fiber, *Fibers and Polymers* (2010), 5,775-781
- 27 Kim, J., Montero, G., Habibi, Y., **Hinestroza, J.**, Genzer, J., Argyropoulos, D.,Rojas, O., Dispersion of cellulose crystallites by nonionic surfactants in a hydrophobic polymer matrix. *Polymer Engineering & Science* (2009), 49(10), 2054-2061.
- 26 Dong, H., **Hinestroza, J.**, Metal Nanoparticles on Natural Cellulose Fibers: Electrostatic Assembly and In Situ Synthesis, *ACS Applied Materials and Interfaces*, *ACS Appl. Mater. Interfaces*, (2009), 1 (4), pp 797-803
- 25 Song, J., Liang, J., Liu, X., Krause, W., **Hinestroza, J.**, Rojas, O., Development and Characterization of Thin Polymer Films Relevant to Fiber Processing, *Thin Solid Films* (2009) , 517, 4348-4354
- 24 Zhu, H., **Hinestroza, J.**, Collection Efficiency for Filters with Staggered Parallel Y and Triple Y Fibers: A Numerical Study (2009), *Journal of Engineered Fibers and Fabrics*, 4,1,16-25
- 23 Kim, J., **Hinestroza, J.**, Jasper, W., Barker, R., Effect of Solvent Exposure on the Filtration Performance of Electrostatically Charged Polypropylene Filter Media (2009), *Textile Research Journal*, 79, 4, 343-350



- 22 Dong, H., Wang, D., Sun, G., **Hinestroza, J.**, Assembly of Metal Nanoparticles on Electrospun Nylon 6 Nanofibers by Control of Interfacial Hydrogen Bonding Interactions, *Chemistry of Materials*, (2008), 20, 21, 6627-6632
- 21 Wu, H., Fan, J., Qin, X., Mo, S., **Hinestroza, J.**, Fabrication and characterization of a novel PP/PVA/Al hybrid layered assembly for high performance fibrous insulations, *Journal of Applied Polymer Science*, (2008) 110,4,2525-2530
- 20 Avila, A.G., **Hinestroza, J.** Tough Cotton , *Nature Nanotechnology*, (2008), 3,458-459
- 19 Talwar, S., **Hinestroza, J.** Pourdeyhimi, B., Khan, S., Associative Polymer Facilitated Electrospinning of Nanofibers, *Macromolecules*, (2008) 41,12,4275-4283
- 18 Wang, D., Sun, G., Chiou, B-S, **Hinestroza, J.**, Controllable Fabrication and Properties of Polypropylene Nanofibers, *Polymer Engineering & Science* (2007) 47,11, 1865-1872
- 17 Bellan, L., Craighead, H., **Hinestroza, J.**, Direct measurement of fluid velocity in an electrospinning jet using particle image velocimetry, *Journal of Applied Physics*, (2007)102, 10, 1-6
- 16 Hyde, G. K., Park, K. J., Stewart, S. M., **Hinestroza, J.** Parsons, G. N., Atomic Layer Deposition of Conformal Inorganic Nanoscale Coatings on Three-Dimensional Natural Fiber Systems: Effect of Surface Topology on Film Growth Characteristics *Langmuir*, (2007) 23, 9844 - 9849
- 15 Jasper, W., Mohan, A., **Hinestroza, J.**, Barker, R., Degradation Processes in Corona-Charged Electret Filter-Media with Exposure to Ethyl Benzene *Journal of Engineered Fibers and Fabrics*, (2007) 2,4, 19-24
- 14 Hyde, K. Dong, H., **Hinestroza, J.** Effect of surface cationization on the conformal deposition of polyelectrolytes over cotton fibers, , *Cellulose*, (2007)14, 6, 615-623
- 13 Kim, J., Jasper, W., **Hinestroza, J.** Probing Solvent-Induced Charge Degradation in Electret Fibers via Electrostatic Force Microscopy, *Journal of Microscopy*, (2007) , 20,1-8
- 12 Kim, J., Jasper, W. **Hinestroza, J.** Charge Characterization of an Electrically Charged Fiber Via Electrostatic Force Microscopy. *Journal of Engineered Fibers and Fabrics*, (2006) 1,2, 30-46
- 11 Jasper, W., **Hinestroza, J.**, Mohan, A., Kim, J., Shiels, B., Gunay, M., Thompson, D., & Barker, R. (2006). Effect of xylene exposure on the performance of electret filter media. *Journal of aerosol science*, 37(7), 903-911.
- 10 De Kee, D., Liu, Q., **Hinestroza, J.**, Viscoelastic Non-Fickian Diffusion, *Canadian Journal of Chemical Engineering* (2005), 83, 913-929
- 9 Jasper, W., **Hinestroza, J.**, Mohan, A., Thompson, D., Barker, R. (2005). Effect of phase of toluene on filtration performance of electret filter media against di-octyl-phthalate aerosols. *Journal of the International Society for Respiratory Protection* ,22, 97-105
- 8 Hyde, K., Rusa, M., **Hinestroza, J.** Electrostatic Self-assembly of polyelectrolytes on natural fibers: Cotton. *Nanotechnology*, 16 S422-S428 (2005)
- 7 Puri, P. **Hinestroza, J.** De Kee, D. Transport of small molecules through mechanically elongated polymeric membranes. *Journal of Applied Polymer Science*, 96 ,1200-1203 (2005).
- 6 **Hinestroza, J.**, De Kee, D. "Barrier properties of LLDPE geomembranes under mechanical deformation", *Journal of Environmental Engineering* , 12, 1468-1474(2004)
- 5 Qian, L., **Hinestroza, J.** Application of nanotechnology for high performance textiles. *Journal of Textile and Apparel, Technology and Management* , 4 (4), (2004)
- 4 **Hinestroza, J.**, Papadopoulos, K.D. "Using Spreadsheets and Visual Basic Applications as Teaching Aids for a Unit Operations Course", *Chemical Engineering Education*,37,316-320 (2003)
- 3 **Hinestroza, J.**, De Kee, Daniel; Pintauro, Peter N. Apparatus for Studying the Effect of Mechanical Deformation on the Permeation of Organics through Polymeric Films. *Industrial & Engineering Chemistry Research* (2001), 40(9), 2183-2187.
- 2 De Kee, D., Fong, C. F. Chan Man, Pintauro, P., **Hinestroza, J.**, Yuan, G. Burczyk, A., Effect of temperature and elongation on the liquid diffusion and permeation characteristics of natural rubber, nitrile rubber, and bromobutyl rubber. *Journal of Applied Polymer Science* (2000), 78(6), 1250-1255.
- 1 Lambert, C., Vincent, M., **Hinestroza, J.**, Sun, N., Gonzalez, R. Activity and selectivity of a Pd/g-Al<sub>2</sub>O<sub>3</sub> catalytic membrane in the partial hydrogenation of acetylene. *Studies in Surface Science and Catalysis* (2000), 130C, 2687-2692.

## **Books and Book Chapters**

### **Books Edited**



**Hinestroza, J.**, Netravali, A., (2014) *Cellulose Based Composites*, Wiley-VCH Verlag GmbH & Co **ISBN 978-3-527-32719-5**

### **Book Chapters**

1. Dong, H., **Hinestroza, JP.**, (2014) Conformal Coating of Antimicrobial Silver Nanoparticles on Cationic and Anionic Cellulosic Substrates. In Hinestroza and Netravali (Eds), *Cellulose Based Composites*, Wiley-VCH **ISBN 978-3-527-32719-5**
2. Morales-Luckie, R., Vilchis-Nestor, A., Sanchez-Mendieta, V., **Hinestroza, JP.**, (2014) Bio-inspired Synthesis of Metal Nanoparticles Using Cellulosic Substrates as Nature Templates. In Hinestroza and Netravali (Eds), *Cellulose Based Composites*, Wiley-VCH **ISBN 978-3-527-32719-5**
3. Morales-Luckie, R., Gama-Lara, S., Becerril-Juarez, I., Vilchis-Nestor, A., Sanchez-Mendieta, V., **Hinestroza, JP.**, (2014) Bio-composites made from bovine bone and crystals of silver and platinum. In Hinestroza and Netravali (Eds), *Cellulose Based Composites*, Wiley-VCH **ISBN 978-3-527-32719-5**
4. Song, J., Li, Y., **Hinestroza, JP.**, Rojas, O., (2009) Tools to Probe Nanoscale Surface Phenomena in Cellulose Thin Films: Applications in the Area of Adsorption and Friction. In Lucia, L. and Rojas, O., *The Nanoscience and Technology of Renewable Biomaterials*. John Wiley & Sons Ltd, LLC. **ISBN 978-1-405-16786-4**
5. Li, Y., **Hinestroza, JP.** (2008) Boundary lubrication phenomena in coated textile surfaces. In B.S. Gupta (Ed), *Friction in Textile Materials*. CRC Press, LLC. **ISBN 978-1-855-73920-8**
6. Hyde, G.K., **Hinestroza, JP.** (2007) Electrostatic Self-Assembled films for cotton fibers. In P. Brown (Ed), *Nanofiber and nanotechnology in textiles*. (2007); Woodhead Publishing. **ISBN 978-1-420-04449-2**
7. Barrera, C., Rinaldi, C., Satcher, M., **Hinestroza, J.** (2007) Textile Nanotechnologies: Electrospun Nanofibers with Magnetic Domains for Smart Tagging of Textile Products, *Handbook of Nanoscience, Engineering, and Technology*, Second Edition Taylor and Francis Publishing **ISBN 978-0-849-31200-7**
8. De Kee, D., **Hinestroza, J.**, Liu, Q. (2005). Non-Fickian diffusion in systems with complex interfaces. In P. Chen (Ed.), *Molecular interfacial phenomena of polymers and biopolymers*. Abington, Cambridge, CB1 6AH, England : Woodhead Publishing Limited **ISBN 978-1-855-73928-4**

## **Patents and Invention Disclosures**

### **U.S. Patents Granted**

- 2018** **US 9, 855,545 B2** Porous cyclodextrin polymeric materials and methods of making and using the same, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., Hinestroza, Juan, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian
- 2017** **US 9, 624,314 B2** Porous cyclodextrin polymeric materials and methods of making and using the same, Dichtel; William R, Alsbaiee, Alaaeddin, Smith Brian J., Hinestroza, Juan, Alzate-Sanchez, Diego, Xiao, Leilei, Ling, Yuhan, Helbling, Damian
- 2016** **US 9,494,865 B2** Microscopically structured polymer monoliths and fabrication methods, Hinestroza, J., Zhu Huaning
- 2015** **US 9,186,651 B2** Metal organic framework modified materials, methods of making and methods of using same, Da Silva Pinto, M., Sierra, C., Hinestroza, J.
- 2014** **US 8,491,668 B2** Conformal Particle Coatings on Fibrous Materials, Hinestroza, J., Dong, H.
- 2013** **US 8,679,197 B2** - Conformal Particle Coatings on Fibrous Materials, Hinestroza, J., Dong, H.

## **RESEARCH FINANCIAL SUPPORT RECORD**

### FLUORINE-FREE COATINGS FOR TEXTILES

#### EXPLORING HYDROPHOBICITY AND OLEOPHOBICITY USING NANOPARTICLES

PIs: J. Hinestroza, R. Ozer

Source of Funds: TAL industries

Amount Funded: \$ 420,033

Starting Date: July 2015

Ending Date: June 2017

### EXPLORING HYDROPHOBICITY AND OLEOPHOBICITY USING NANOPARTICLES

PIs: J. Hinestroza, R. Ozer

Source of Funds: Cornell Center for Fiber and Fashion Innovation – TAL industries

Amount Funded: \$ 45,033

Starting Date: December 2014

Ending Date: June 2015

### EXPLORING THE USE OF METAL-ORGANIC FRAMEWORKS TO ADD FUNCTIONALITY TO TEXTILE FIBERS

PIs: J. Hinestroza

Source of Funds: Cornell Center for Fiber and Fashion Innovation- Golden Quimica

Amount Funded: \$ 60,000

Starting Date: September 2014

Ending Date: August 2017

### Exploring bicomponent fibers for high performance filtration of body fluids

PIs: J. Hinestroza

Source of Funds: Fresenius Medical Care, Inc

Amount Funded: \$ 35,000

Starting Date: November 2014

Ending Date: June 2015

### REDUCING POLLUTION IN TEXTILE DYEING PROCESSES USING NANOIONIC MATERIALS

PIs: J. Hinestroza

Source of Funds: Lehman Fund for Scholarly Exchange with China

Amount Funded: \$ 17,000

Starting Date: June 2013

Ending Date: June 2014

### GAS IN- LIGHT OUT

PIs: J. Hinestroza, SY Yoon

Source of Funds: Cornell Center for Arts

Amount Funded: \$ 5,000

Starting Date: May 2013

Ending Date: October 2014

#### EXPLORING THE USE OF BICOMPONENT FIBERS FOR HIGH PERFORMANCE FILTRATION SYSTEMS

PIs: S.K. Obendorf (PI), J. Hinestroza, C. Coffman  
Source of Funds: USDA- National Institutes of Food- Hatch  
Amount Funded: \$ 150,000  
Starting Date: October 2012  
Ending Date: September 2016

#### DEVELOPMENT OF BIOCHAR-BASED FIBERS FOR PERSONAL PROTECTIVE EQUIPMENT

PIs: A. Hay (PI), J. Hinestroza  
Source of Funds: Atkinson Center for a Sustainable Future  
Amount Funded: \$ 100,000  
Starting Date: June 2010  
Ending Date: May 2011

#### HUMAN CENTERED PHYSICAL INTERACTION MODELING FOR PERSONAL PROTECTIVE EQUIPMENT

PIs: D. Feathers (PI), S. Ashdown, J. Hinestroza  
Source of Funds: Cornell College of Human Ecology  
Amount Funded: \$ 50,000  
Starting Date: March 2010  
Ending Date: February 2011

#### ENABLING THE USE OF RENEWABLE, SUSTAINABLE, AND NATIVE CELLULOSIC MATERIALS FROM THE AMAZON RAINFOREST AND THE ARGENTINEAN WETLANDS INTO HIGH PERFORMANCE APPLICATIONS

PI: J. Hinestroza (PI)  
Source of Funds: Cornell Mario Einaudi Center for International Studies  
Amount Funded: \$ 10,000  
Starting Date: September 2009  
Ending Date: August 2010

#### INTERACTIONS OF NATURAL DYES WITH TEXTILE SUBSTRATES

PI: J. Hinestroza (PI)  
Source of Funds: Cornell Center for Materials Research- Golden Quimica  
Amount Funded: \$ 120,000  
Starting Date: September 2008  
Ending Date: September 2010

#### MODELING OF FLOW CONTAINING NANOPARTICLES THROUGH ELECTROSTATICALLY CHARGED MONOLITH FILTERS

PI: J. Hinestroza (PI)  
Source of Funds: US Defense Threat Reduction Agency  
Amount Funded: \$ 359,998  
Starting Date: December 2007  
Ending Date: September 2010

MANIPULATION OF NANOSCALE PHENOMENA AS A CLEAN AVENUE FOR THE PRODUCTION OF SMART AND MULTIFUNCTIONAL TEXTILES: A COLLABORATIVE ENDEAVOR OF CORNELL UNIVERSITY AND HONG KONG POLYTECHNIC UNIVERSITY

PI: J. Hinestroza (PI)  
Source of Funds: Lehman Fund for Scholarly Exchange with China  
Amount Funded: \$ 20,000  
Starting Date: Jan 2008  
Ending Date: December 2008

USING AGRICULTURAL WASTE PRODUCTS AS SUBSTRATES FOR BIOLOGICALLY INSPIRED SYNTHESIS OF CATALYTIC METAL NANOPARTICLES

PI: J. Hinestroza (PI)  
Source of Funds: USDA HATCH  
Amount Funded: \$75,000  
Starting Date: September 2007  
Ending Date: August 2010

METAL-ORGANIC POLYHEDRA BLENDED FIBERS FOR ADVANCED FILTRATION AND PERSONAL PROTECTION

PI: J. Hinestroza (PI)  
Source of Funds: US Defense Threat Reduction Agency  
Amount Funded: \$756,114  
Starting Date: May 2008  
Ending Date: December 2011

POLYMER FLOW IN CONFINED ELASTIC BOUNDARIES: STRONGER CONTINUOUS NANOFIBERS

PI: J. Hinestroza (PI)  
Source of Funds: US Department of Commerce- National Textile Center  
Amount Funded: \$80,689  
Starting Date: June 2008  
Ending Date: June 2011

LIGNOCELLULOSICS AS PRECURSORS OF HIGH PERFORMANCE BIOPOLYMER STRUCTURES

PIs: O. Rojas (PI), J. Kadhla, J. Hinestroza  
Source of Funds: US Department of Agriculture- National Research Initiative  
Amount Funded: \$435,000  
Starting Date: July 2007  
Ending Date: June 2012

ENGINEERING PHYSIOLOGICAL DISTRIBUTIONS OF ZONE-SPECIFIC PHENOTYPE AND FIBER ORIENTATION IN 3-D TISSUE-ENGINEERED CARTILAGE SCAFFOLDS

PIs: B. Kirby (PI), J. Hinestroza, M. Frey  
Source of Funds: Morgan Family Tissue Engineering Fund  
Amount Funded: \$ 115,000  
Starting Date: September 2007  
Ending Date: December 2008

CAREER: EXPLORING THE USE OF INDUCED NEGATIVE VISCOSITIES AS A NEW DEGREE OF FREEDOM IN POLYMER NANOMANUFACTURING

PI: J. Hinestroza (PI)  
Source of Funds: National Science Foundation  
Amount Funded: \$412,000  
Starting Date: July 2007  
Ending Date: June 2011

FUNCTIONALIZED NANOFIBERS FOR HIGH PERFORMANCE FILTRATION OF CONTAMINANTS, BIOLOGICAL AGENTS AND HAZARDOUS MATERIALS

PI: J. Hinestroza (PI)  
Source of Funds: NY State Office of Science, Technology and Academic Research  
Amount Funded: \$200,000  
Starting Date: February 2006  
Ending Date: January 2008

NER/COLLABORATIVE RESEARCH: MANIPULATION OF THE ELECTROSPINNING OF POLYMER FIBERS USING APPLIED MAGNETIC FIELDS

PI: J. Hinestroza (PI)  
Source of Funds: National Science Foundation  
Amount Funded: \$55,999  
Starting Date: February 2006  
Ending Date: February 2007

NANOLAYER SELF-ASSEMBLIES: NOVEL, ADAPTABLE FIBER SURFACES

PIs: J. Hinestroza (PI), P. Hauser  
Source of Funds: National Textile Center  
Amount Funded: \$163,500  
Starting Date: May 2006  
Ending Date: May 2007

BOUNDARY LAYER AND SELF-ASSEMBLY IN FIBER PROCESSING

PIs: O. Rojas (PI), J. Hinestroza, W. Krause  
Source of Funds: National Textile Center  
Amount Funded: \$95,756  
Starting Date: May 2006  
Ending Date: May 2007

SMART TEXTILES VIA SELF-ASSEMBLED NANOLAYERS AND ATOMIC LAYER DEPOSITION

PIs: J. Hinestroza (PI), G. Parsons  
Source of Funds: NCSU Nanotechnology Steering Committee  
Amount Funded: \$50,000  
Starting Date: July 2005  
Ending Date: June 2006

BIODEGRADABLE NANORODS FOR HIGH-PERFORMANCE MULTIFUNCTIONAL NANOCOMPOSITES

PIs: O. Rojas (PI), J. Hinestroza, J. Genzer  
Source of Funds: NCSU Nanotechnology Steering Committee  
Amount Funded: \$50,000  
Starting Date: July 2005  
Ending Date: June 2006

#### DEBOTTLENECKING THE ELECTROSPINNING PROCESS

PIs: J. Hinestroza (PI), C. Rinaldi  
Source of Funds: Institute of Textile Technology  
Amount Funded: \$45,000  
Starting Date: March 2005  
Ending Date: May 2006

#### BOUNDARY LAYER AND SELF-ASSEMBLY IN FIBER PROCESSING

PIs: O. Rojas (PI), J. Hinestroza, W. Krause  
Source of Funds: National Textile Center  
Amount Funded: \$158,000  
Starting Date: May 2005  
Ending Date: May 2006

#### HIGH MODULUS ALIPHATIC NYLON FIBERS

PIs: R. Kotek (PI), A. Tonelli, J. Hinestroza  
Source of Funds: National Textile Center  
Amount Funded: \$152,000  
Starting Date: May 2005  
Ending Date: May 2006

#### MECHANICAL PROPERTIES OF INDIVIDUAL NANOFIBERS

PIs: J. Hinestroza (PI)  
Source of Funds: Nonwovens Cooperative Research Center  
Amount Funded: \$120,000  
Starting Date: August 2004  
Ending Date: August 2006

#### NANOTECHNOLOGY IN TEXTILES

PIs: J. Hinestroza (PI), W. Krause  
Source of Funds: Department of Energy/ Oak Ridge National Laboratory  
Amount Funded: User Grant- Access to CNMS Instrumentation  
Starting Date: December 2003  
Ending Date: October 2005

#### LIGHT WEIGHT CBRN PROTECTIVE FIRE FIGHTER TURNOUT

PIs: R. L. Barker (PI), D. Thompson, J. Hinestroza, B. Pourdeyhimi  
Source of Funds: Department of Homeland Security/ Technical Support Working Group  
Amount Funded: \$836,217  
Starting Date: January, 2004  
Ending Date: June, 2005



INVESTIGATION OF FILTER DEGRADATION PROCESSES FOR RESPIRATORY PROTECTIVE SYSTEMS AND DEVELOPMENT OF MODELS FOR SYSTEM FUNCTION AND DETERIORATION

PIs: W. Jasper (PI), R. Grimes, J. Hinestroza, R. L. Barker, D. Thompson  
Source of Funds: NIOSH, CDC  
Amount Funded: \$497,322  
Starting Date May 2003  
Ending Date June 2005

ELECTROSPUN MAGNETIC NANOFIBERS

PI: J. Hinestroza (PI)  
Source of Funds: NCSU Faculty Research and Professional Development Fund  
Amount Funded: \$8,000  
Starting Date March 2004  
Ending Date March 2005

SELECTIVE MEMBRANES FOR THE SEPARATION OF BIOETHANOL FROM PLANT BIOMASS

PIs: J. Hinestroza (PI) and R. Sharma  
Source of Funds: NCSU Faculty Research and Professional Development Fund  
Amount Funded: \$20,000  
Starting Date May 2004  
Ending Date May 2005

TEXTILE ENGINEERING EDUCATION AND RESEARCH IN CENTRAL AMERICA

PIs: J. Hinestroza (PI)  
Source of Funds: NCSU Office of International Affairs  
Amount Funded: \$5,000  
Starting Date May 2004  
Ending Date July 2005

DEPOSITION OF FUNCTIONAL NANOLAYERS OVER TEXTILE FIBERS

PIs: J. Hinestroza (PI)  
Source of Funds: Institute of Textile Technology  
Amount Funded: \$45,000  
Starting Date May 2004  
Ending Date May 2005

SYNTHESIS OF FUNCTIONALIZED POLYMERIC RESINS WITH A REACTIVE AMINO GROUPS

PIs: R. Kotek (PI), J. Hinestroza and H. Freeman  
Source of Funds: American Red Cross and PRD Technologies, Inc  
Amount Funded: \$107,000  
Starting Date May 2004  
Ending Date July 2005

## **ADVISING AND MENTORING RECORD**

### **Visiting Scholars**

Prof. Esteban Garcia-Tamayo*	(2018)	Universidad Pontificia Bolivariana, Colombia
Prof. Tincuta Heinzl*	(2017)	University of Loughborough, UK
Prof. Adriana Herrera	(2015)	Universidad de Cartagena, Colombia
Prof. Ruya Ozer	(2015)	Radford University
Prof. Monica Alvarez	(2014)	EAFIT University, Colombia
Prof. Cesar Franco	(2013-2015)	Federal University of Santa Catarina, Brazil
Prof. Eugenio Otal	(2013)	National Technical University, Argentina
Prof. Manuela Kim	(2013)	National Technical University, Argentina
Prof. Young-Jin Jeong	(2011-12)	Soongsil University, Korea
Prof. Rodrigo Torres	(2010-11)	Universidad Industrial de Santander, Colombia
Prof. David Lukas*	(2010)	Technical University of Liberec, Czech Republic
Prof. Cesar Sierra	(2010, 2014)	National University of Colombia, Colombia
Prof. Chaoxia Wang	(2009-10)	Jiangnan University, China
Prof. Adalena Kennedy	(2009-2011)	Federal University Amazon, Brazil
Prof. Jintu Fan	(2009)	Hong Kong Polytechnic University, Hong Kong
Prof. Alba Avila	(2008)	Andes University, Colombia

\* Fulbright Scholars

### **Postdoctoral Scholars**

Goeun Sim, Ph.D.	Currently at HP
Frederick Ochanda, Ph.D.	Currently at United Technologies Aerospace Systems
Marcia Silva da Pinto, Ph.D.	Currently at Nestle Research Laboratories
Victoria Calero, Ph.D.	Currently at IBM Research
Huaning Zhu, Ph.D.	Currently at Dassault Systemes
Laura McJilton, Ph.D.	Currently at Intel
Sachin Talwar, Ph.D.	Currently at 3M
Junlong Song, Ph.D.	Currently Faculty at Nanjing National University
Hong Dong, Ph.D.	Currently at the U.S. Army Research Laboratory
HaoHao Huang, Ph.D.	Currently Faculty at Beijing University of Chemical Technology

### **Ph.D. Students**

Marion Schelling (Expected 2018)	Thesis: <i>Acoustic Force Microscopy in liquid filled fibers</i>
Lina Sanchez-Botero (Expected 2018)	Thesis: <i>Induced Negative Viscosity in Polymeric Suspensions</i>
Yan Li, Ph.D. (2009)	Thesis: <i>Probing Friction at the Nanoscale using Lateral Force Microscopy</i>
Jooyoun Kim, Ph.D. (2005) NC State University	Thesis: <i>Investigation on Charge Deterioration of Electrically Charged Filter Media Using Electric Force Microscopy.</i>

### **M.Sc. Students**

#### **Cornell University**

1. Fangfang Wang (2017)
2. Simge Uzun (2016) Currently at Drexel University
3. Soshana Smith (2012) Currently at Cornell University

4.	Camila Silva Flor	(2010)	Currently at L'Oreal Research
5.	Karmann Mills	(2010)	Currently at Research Triangle Institute
6.	Alejandra Andere-Jones	(2009)	Currently at 3M
7.	Christina Diaz	(2009)	Currently at US Army Natick Center
<b>NCSU</b>			
8.	Timothy Price	(2006)	
9.	Bilge Hatiboglu	(2006)	Currently at Intel, Inc
10.	Melinda Satcher	(2006)	Currently at Kemira Chemicals, Inc
11.	Kevin Hyde	(2005)	Currently at Alditri, LLC
12.	Brian Shiels	(2005)	Currently at PBI Performance Products, Inc

## Undergraduate Researchers

### **Cornell University**

1.	Mariam Ashroff Omar (FSAD)		
2.	Samantha Prashad (FSAD)		
3.	Cristian Aramburo (CHE)		
4.	Rae Dagdagan (FSAD)		
5.	Lauren Briggs (BME)		
6.	Natasha Armbrust (CS)		
7.	Javier Jimenez (FSAD)		
8.	Mario Velado (HBHS)		
9.	Alejandro Garcia (PHYS)		Currently at Med School Cornell
10.	Samuel Leyens (BEE)		
11.	Joseph Edwards (BEE)		Currently at Procter& Gamble
12.	Jessica Lin (BEE)		
13.	Zerui Sophie Zhu (CHEME)		Currenty at Oracle,Inc
14.	Victor Haas (CHEM)		
15.	Catherine Reyes(CHEM)		Currently at University of Luxembourg
16.	Zhe Hao Zhou (CHEME)		Currently at Corning, Inc
17.	Jason (YoonChul) Haam (FSAD)		
18.	Deanna Nardella (HBHS)		
19.	Alexander Hartoto (ECE)		
20.	Brian Choi (ECE)		Currently at Intel, Inc
21.	Ashley Weiner (FSAD)		
22.	Kelton Minor (DEA)		
23.	Emilija Mayer (MSE)		Currently at GE, Inc
24.	George Osae (CHEM)		
25.	Kathleen M. Donley (FSAD)		
26.	Carlos Becerril (UTSA-CCMR REU)		Currently at Cymer, Inc
27.	Rafael Aquino (MAE)		Graduate School at Cornell University
28.	Naomi Birbach (CHEM)		Currently at US Patent and Trademark Office
29.	Selina Lok (MAE)		
30.	Juan Uribe (CHEME)		Currently at Procter and Gamble
31.	Hekia Bodwitch (HBHS)		Graduate School at UC Berkeley
32.	Michael Crouch (NCSU-CCMR REU)		Law School at UC Berkeley
33.	Jimmy Zhou (ECE)		
34.	Elizabeth Franzen (HBS)		Cornell Weill Medical School

### **NCSU**

35.	Troy Gould		Currently at University of Colorado
36.	William McGuire		Currently at Solace Development Group
37.	Mary Rebovich		Graduate School Cornell University
38.	Amika Olchovick		

Updated 10/10/2018

- 39. Errol Purkett
- 40. Jordan Massey

Currently at Johnson and Johnson  
Graduate School U of Texas San Antonio

**Reviewer of peer-reviewed publications:**

Nature Nanotechnology  
ACS Applied Materials and Interfaces  
Macromolecules  
Nanotechnology  
Cellulose  
Journal of Engineered Fibers and Fabrics  
AIChE Journal  
Journal of Biomaterials Science, Polymer Edition  
Journal of the Textile Institute  
Journal of Polymer Science: Part B: Polymer Physics  
Current Opinions in Colloidal Science  
Chemistry of Materials  
Colloids and Surfaces A: Physicochemical and Engineering Aspects

**Reviewer of research proposals:**

National Science Foundation  
The US National Academies  
U.S. Department of Agriculture  
U.S. Civilian Research and Development Foundation  
U.S. Department of Defense  
U.S. Army Research Office  
Czech Science Foundation  
Ontario Ministry of Research and Innovation  
Los Alamos

**COMMUNITY OUTREACH ACTIVITIES**

**Presentations and Science Demonstrations**

**CCMR- Cornell Center for Material Research**

- Big Brothers Big Sisters of America- (After School Programs for K-12 kids)
- Microworld Festival in New York City and Puerto Rico (Elementary School Teachers)
- Materials Science Workshop in New York City (High School students)

**CNS- Cornell Center for Nanoscale Systems**

- Summer Institute for Physics Teachers (High School Teachers)
- Nanoday at Cornell Festival (K-12 students)

**CNF (Cornell Nanoscale Science and Technology Facility)**

- Kavli Institute Journalists Workshop in Nanotechnology (Science Journalists)

**FSAD (Fiber Science & Apparel Design)**

- Campus-wide Career Explorations Workshop (High School Students)

**Technical Consultant to Small Businesses in New York State**

**CCMR- Cornell Center for Material Research**

- NYSTAR Jumpstart project with NewTex, Inc. Victor, NY
- NYSTAR Jumpstart project with Select Fabricators, Inc. Canandaigua, NY
- NYSTAR Jumpstart project with Buckingham Ropes, Inc. Binghamton, NY

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## **Public Media**

- **National Public Radio**
  - o Earth & Sky radio segment on nanotextiles
    - <http://nanotextiles.human.cornell.edu/HinestrozaNPR.mp3>
  - o Science Friday
    - <http://nanotextiles.human.cornell.edu/ScienceFridayInterview.mp3>
- **Public Broadcasting Service**
  - o DragonFly TV segment on nanosilver
    - <http://www.youtube.com/watch?v=72MYWTnn6Yo>
- **NHK (Japanese Public TV)**
  - o Gatchan TV Segment on nanotextiles
    - <http://www.youtube.com/watch?v=gLPp-N8W1pk>

## **Involvement with Underrepresented Minorities**

- **Society of Hispanic Professional Engineers SHPE**
  - o Judge Technical Paper Competition
  - o Workshop for students interested in careers in academia
- **National Consortium for Graduate Degrees for Minorities in Engineering and Science, GEM**
  - o Reviewer of fellowship applications
- **Louis Stokes Alliance for Minority Participation Undergraduate Research**
  - o Workshop on preparing research posters
- **Society of Women Engineers**
  - o Mentoring of female engineering and science students
  - o Recruitment of REU and graduate students
- **College of Human Ecology Mentoring Program**
  - o Faculty Partner

## **Senior Citizens and Service Learning**

- **LEAP (Living Environments Aging Partnership)**
  - o FSAD 4660- (2006-2017) Participation of elders in intergenerational service learning experiences