

# Jose Alejandro Fernandez

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## Research Experience

### The Nonwovens Institute / NC State University

Raleigh, NC

Research Assistant

Jan. 2023 – present

- Biodegradability of PLA fibers.
- Composting of PLA fibers.
- Biodegradation of wood-based materials.
- Polymers characterization.

### University of Los Andes

Merida, Venezuela

Research Assistant

Aug. 2018 – Aug. 2022

- Interfacial phenomena: surface and interfacial tension of surfactant solutions and emulsions.
- Chemical analysis: spectrometric analysis of surfactants and lignin derived compounds.
- Lignosulfonates and lignin: dispersant applications for these compounds.
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## Education

Ph.D., Forest Biomaterials | North Carolina State University

expected August. 2027

B.D., Chemical Engineering | University of Los Andes

Aug. 2018

## Publications

- Bullon, J., Márquez, L., Fernández, J.A., Scorzza, J., Scorza, J.V., Rodríguez, J., Cordero, A., Vejar., F., Koteich., S., Forgiarini, A. A promising Cutaneous Leishmaniasis treatment with a nanoemulsion-based cream with generic pentavalent antimony (Ulamina) as active ingredient. *Cosmetics*, 2022.

## Conference Presentations

- Fernandez, J.A., Martinez, D., Salazar R., F., Bullon, J. (2022) Determination of the Concentration of Commercial Cationic Surfactants in Aqueous Solutions by the Colloidal Titration Method. Poster presentation at the 2022 AOCS Annual Meeting and Expo.
- Fernandez, J.A., Venditti, R., Pawlak, J. (2023). Understanding the fundamentals of biodegradability of polymer blends and additives for nonwovens applications. Poster presentation at the 2023 RISE Conference.

## Professional Development

### Fiber and Filament Extrusion Fundamental Short Course

Nonwovens Institute

Sep. 12-14, 2023. Raleigh, NC.

### Hydroentangling Short Course

Nonwovens Institute

Nov. 9, 2023. Raleigh, NC.

### Spunbond Technology Short Course

Nonwovens Institute

Mar. 19-21, 2024. Raleigh, NC.

### Nonwovens Institute Graduate Certificate

Nonwoven Institute

Jan. 2023 – Dec. 2024 (expected). Raleigh, NC.

## **Skills & Additional Experiences**

- Teaching assistant in Analytical Chemistry in the Industrial and Applied Chemistry Department of the School of Chemical Engineering at the University of Los Andes, Merida, Venezuela.
- Short-terms internships in a paper mill: Papeles Venezolanos, C.A (PAVECA) in 2015. Studying the effect of different chemicals and additives used during the paper making process on the flotation cell in one of the paper machines of the plant.
- Polymer analysis techniques: Differential Scanning Calorimetry (DSC), Modulated DSC, Thermogravimetric Analysis (TGA), Gel permeation chromatography (GPC), FT-IR.
- Biodegradation and composting of polymeric materials.
- Laboratory scale extrusion of polymers.
- Languages: English and Spanish (both speaking and writing).
- Runner and racewalker.