

# PALLAV JANI

+1 (734) 773-5755 • pkjani@ncsu.edu • [linkedin.com/in/pallavjani](https://www.linkedin.com/in/pallavjani)

## SUMMARY

Experienced in process and method development. Proficient in thin film synthesis and characterization via metrology and imaging tools. Research interest in surface and interfacial engineering, polymer science, surfactants and sustainability.

## EDUCATION

<b>North Carolina State University</b> Ph.D. in Chemical Engineering ( <i>Provost Doctoral Fellow '19, Graduate Merit Award</i> )	<b>Raleigh, NC</b> May 2023
<b>University of Michigan</b> Master of Science in Engineering in Chemical Engineering   <i>GPA – 3.69/4</i>	<b>Ann Arbor, MI</b> December 2018
<b>Institute of Chemical Technology</b> Bachelor of Technology in Oils, Oleochemicals and Surfactants Technology   <i>3.83/4</i>	<b>Mumbai, India</b> May 2017

## RESEARCH EXPERIENCE

<b>North Carolina State University (The Nonwovens Institute)</b> <b>Graduate Research Assistant</b>   <i>Interactions between slip agent, finishes &amp; nonwovens</i>	<b>Raleigh, NC</b> August 2019 - present
<ul style="list-style-type: none"><li>Characterize slip agent-topical finish interactions with nonwovens used in the hygiene industry</li><li>Correlate nonwoven-skin friction and surface properties (wettability, hydrophilicity) to optimize nonwoven hygiene materials</li></ul>	
<b>University of Michigan (Ford Alliance Project)</b> <b>Research Assistant</b>   <i>Functional coating to mitigate low temperature compressor coking</i>	<b>Ann Arbor, MI</b> October 2017 – April 2019
<ul style="list-style-type: none"><li>Developed metal-metal oxide thin films via sputtering to reduce low temperature coking in turbocharger compressors by 90%</li><li>Optimized an oil aerosol testing apparatus at Ford R&amp;D lab to simulate compressor deposits and test anti-coking coatings</li><li>Fabricated a novel laboratory setup to mimic compressor flow conditions for testing deposit adhesion to coated substrates</li></ul>	
<b>University of Michigan (BASF - Multidisciplinary Design Project)</b> <i>The Impact of Shear on Dirt Removal in Automated Washing</i>	<b>Ann Arbor, MI</b> January – December, 2018
<ul style="list-style-type: none"><li>Designed an experimental dishwashing setup to quantify dirt removal under shear and implemented a 2<sup>3</sup> factorial design</li><li>Identified detergency-dominant, combined and shear-dominant cleaning regimes for non-ionic surfactants</li></ul>	
<b>Institute of Chemical Technology (Undergraduate Thesis)</b> <i>Surfactant mediated Co-Precipitation Protocol &amp; its influence on Morphology</i>	<b>Mumbai, India</b> November 2016 - May 2017
<ul style="list-style-type: none"><li>Synthesized BaSO<sub>4</sub>, CaCO<sub>3</sub> and PbCrO<sub>4</sub> nanoparticles using cationic and non-ionic surfactant templates</li><li>Demonstrated that nature of surfactant can induce shape, size and polymorph changes in precipitates via FE-SEM</li></ul>	

## PROFESSIONAL EXPERIENCE

<b>Ford Motor Company</b> <b>Product Development Intern</b>   <i>Friction Modeling in Diesel Engines</i>	<b>Dearborn, MI</b> May – August, 2019
<ul style="list-style-type: none"><li>Validated and optimized predictive piston-ring friction model in GT Suite for 6.7L diesel engine</li><li>Screened potential friction reduction technologies such as ring coatings, low viscosity oils and downspeeding</li><li>Demonstrated potential fuel economy improvement of 0.85% with a combination of ring coating and low viscosity oil</li></ul>	
<b>Adani Wilmar Limited</b> <b>Process Engineering Intern</b>   <i>Minimizing Palm Oil Refining Losses</i>	<b>Gujarat, India</b> May – June, 2016
<ul style="list-style-type: none"><li>Identified key areas of oil loss by documentation of material flow of palm oil and palm oil-based products</li><li>Proposed optimizations in pressure leaf filtration system to minimize oil loss and increase efficiency of oil refining</li></ul>	

## SKILLS & INTERESTS

<b>Software:</b>	MATLAB, Mathematica, COMSOL, MS Project, GT Suite Friction
<b>Research:</b>	Nanofabrication lab (Physical vapor deposition, Metrology, Graphene growth and transfer), TGA, FT-IR, X-ray Diffraction, UV-vis, SEM, Tensiometry, Raman Spectroscopy, Auger Electron Spectroscopy
<b>Soft Skills:</b>	Project management, Technical communication, Collaboration, Event organization
<b>Interests:</b>	Cricket, Squash, Portrait Drawing & Cooking

## TECHNICAL PRESENTATIONS

- Jani, P.**, Li, P., Fisher, G., Hoard, J., Schwank, J., Cavataio, G. and Uy, D. (November 2019). "Development of a functional coating to mitigate compressor coking". *AIChE Annual Meeting, Orlando, FL*
- Khan, F., **Jani, P.** and Nandanwar, M. (February 2016) "Edible films and coatings: A review". *9th Annual Conference on Advances in Polymers and Coatings, Rangotsav, Mumbai, India*