

# MOTIVATION LETTER

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Myself Augustine Jaision, working as a Research Assistant in SERB-CRG funded Project “Synthesis and application of defect engineered Graphene with transition metals active sites for the oxidation of indoor volatile organic compounds” at the Indian Institute of Technology, Palakkad, India. I have completed my master’s degree with a CGPA of 3.4 out of 4. I have been working on Nano chemistry for the past six months in IIT Palakkad and I would like to build a research career by exploring further aspects of the same and I wish that this letter could show my eagerness and interest to do Ph.D. in this field of study.

My master's project was focused on silver nanoparticle synthesis using greener procedures and its characterization. More specifically, I studied the formation of nanoparticles using greener chemistry, which sees the use of *Carica Papaya* fruit extract as the reducing and stabilizing agent for the nanoparticle synthesis and the absorbance of the Silver nanoparticle are found out using UV-Visible Spectroscopy.

I have done most of my work in Gas Chromatograph and know how to operate the instruments thoroughly and done various reactions using Gas Chromatography like ethylene oxidation and Carbon dioxide hydrogenation with different metal catalyst. I am currently working on VOC oxidation using various liquid volatiles like benzene, toluene, etc., and testing the catalytic activity of various metal oxides with thermal and photo reactor setup. The synthesis of Graphene using CVD and Laser instruments is what I'm simultaneously working on now.

I got motivated to do research on interdisciplinary field involving Nanotechnology and Materials chemistry, during my master's project. I gravitate more towards Nano chemistry and this line of work is what I'm hoping to build a self-sufficient research setup with near-term applications. In the backdrop of the research exposure that I have had, along with the encouragement and support of my mentors, I believe I can contribute positively for the development of our group. I have worked with many groups during my endeavor to learn and I cherish the experience to this day. I'm pretty sure your group can offer me the experience of a lifetime.

Thank you for taking the time to review the letter.