Worked on projects relating to the chemical synthesis (Modified Hummers method, Polyol, precipitation and sol-gel reactions ) of materials which includes Graphene Oxide, Selenium Nanoparticles and Magnetic materials(ferrites) . As part of academic curriculum for Masters, engaged in project on the synthesis of Graphene Oxide through modified Hummers method and fabricated heterostructure on Si substrate. The I-V studies were conducted on the heterostructure. After successfully completing the Masters, joined in a project on the synthesis and characterization of selenium nanostructures for the fabrication of soft-metamaterials. The nanostructures under consideration for the studies where nanosphere and nanorod. The synthesis of these nanomaterials was done by Polyol method. For the material characterization of the synthesized nanoparticles, SEM, TEM, XRD and UV-Vis spectrometer were used. The numerical simulations were done using COMSOL Multiphysics. For the theoretical analysis codes were developed using MATLAB. During the period, attended a paper presentation competition and won first in the Best paper presentation category. On basis of the results, two papers were accepted in international journals. As the first author a paper is accepted in “Applied Surface Sciences” and as a co-author accepted in “Advanced Optical Materials”. To engage in further research, joined in a project, which focus on the synthesis of RADAR absorbing materials. The synthesis of various types of magnetic materials was done by precipitation, sol-gel, and auto-combustion reactions. The synthesized materials were coated on suitable surfaces for the further detailed studies.

Throughout the research career, various instruments like UV-Vis spectrometer, Photo Luminescence spectrometer, Spin coating unit, Dip coating unit, Film coating unit, Centrifuge, Tube Furnace and Chamber Furnace were handled. In addition, have knowledge in programming language: Python, C++, MATLAB and software: Origin, ImageJ .From all the above mentioned research experience, was able synthesis nanoparticles with different dimensions: 1D (selenium nanorod), 2D (Graphene oxide) and 3D (selenium nanosphere).

Iam Aswathi B Nair , post graduate in physics happen to hear about the phd position under your guidance through Mr.Amit Bharadwaj. With regards to your job vacancy, I hereby place before you my application for the position of PhD studentship under your guidance.

During the course of my education and previous employment, I worked on projects relating to the chemical synthesis (Modified Hummers method, Polyol, precipitation and sol-gel reactions) of materials which includes Graphene Oxide, Selenium Nanoparticles and Magnetic materials (ferrites). For the theoretical analysis of the studies, codes were developed in MATLAB. During the period, attended a paper presentation competition and won first in the Best paper presentation category. On basis of the results of studies conducted, two papers were published in international journals. In addition, has knowledge in programming language: MATLAB ,Python, C++, and software: Origin, ImageJ

It will be an honor to offer my assistance in the study, and research of polymer electrodes to enable interfacial stability in room temperature sodium-sulfur batteries, that would help in advancement of energy storing devices. I am looking forward to be a part of your team and I hope you consider my application. Please find detailed information of my education and previous job profiles along with my contact information in my resume attached herewith.