



Pradip Lingfa, Ph.D.

Research Interests

My research work pertains to examining the operational feasibility of alternate fuels in a compression ignition engine. Vegetable oils are promising sources for producing liquid fuels. Hence my Ph.D. research thesis is entitled 'Production of biodiesel from various non-edible vegetable oils such as *Pongamia pinnata*, *Jatropha curcas*, *Ricinus communis L.*, *Aleurite fordii* (Tung oil) and its utilization in compression ignition engine'. In the pursuit of my Ph.D. program, the salient features of my research study includes, seeds collection, decortications of seeds, extraction of raw oil from seeds using either mechanical oil expeller or by Soxlet Method, characterization of raw oil and biodiesel, optimisation of biodiesel production, utilisation of biodiesel with various biodiesel-diesel blends on stationary (Single cylinder) and automotive (Multi-cylinder) diesel engines to assess their suitability and to meet the emerging fuel quality and emission standards. I have gathered experienced through my research endeavors, for optimizing the use of different fuels in a diesel engine without modifying the engine hardware. Looking towards the future, I would embark on conducting endurance and tribological tests both on stationary and automotive diesel engines using biodiesel-diesel blends to have closer look into the present study. The study of biodiesel by-products such as oil-cakes and pod covers as potential for agricultural fertilizers and biogas generation. Further, the study on storage stability, environmental impact assessment and the life cycle assessment (LCA) of biodiesel from *Aleurite fordii*, *Jatropha curcas*, *Ricinus communis L.* and *Pongamia pinnata* oils are the need of hour. Also more optimization studies would be carried out on the compression engines fueled by biofuels, to further improve the engine performance and reduce the exhaust emissions.

Besides above, the other research areas of interest are renewable energy, alternative fuels for internal combustion engines and energy studies.