

Specialty Additive

Role of lubricants is vital in terms of energy saving and to reduce the loss of material, which directly affects the economy of a nation as there is enormous fuel combustion due to the high wear and friction in transportation systems. With the continually growing concern about the impact of conventional lubricants on the environment, efforts have been made in the direction of environmentally benign lubricants by the use of vegetable oil based esters along with synthetic oils as alternatives. The development of efficient lubricant additive which can impart the finest lubricity at the different operating conditions is a subject of crucial importance while keeping the protection of the environment at prime priority. Tremendous amount of research is going on globally in order to develop an environmentally benign alternative/substitute of one of the most widely used lubricant additives zinc dialkyldithiophosphate (ZDDP). However, development of a lubricant additive of the order of ZDDP with absence of triboactive elements such as metal, phosphorous and sulfur is very challenging task. Our group is mainly focused on the development of energy efficient and cost effective hetero atom rich such as nitrogen and oxygen containing multifunctional additives from renewable resources such as biomolecules like amino acids. Also, we are working on development of energy proficient multifunction lube additives from naturally occurring renewable and biodegradable resources.