

CY-608 Advanced Organic Synthesis

Functional Group Chemistry: Acylation, alkylation, halogenation, oxidation and reduction of the olefinic group, acetylenic group, nitriles group and the carbonyl groups. Reaction in Organic Synthesis: Gattermann Koch reaction, Riemer-Tiemann reaction, Claisen condensation, Dieckmann condensation, Aldol condensation, Knoevenagel reaction, Perkin reaction, Stobbe reaction, Michael addition reaction, Mannich reaction, Wittig reaction, Diels-Alder reaction, Hunsdiecker reaction. Selectivity in Reactions: Chemoselectivity, Regioselectivity and Stereoselectivity. Organometallic Chemistry: Bonding and reactions in transition metal complexes, use of palladium in homogeneous catalysis, Heck reaction, Cross coupling of Organometallics and halides, Palladium catalyzed reaction of aromatic rings, Alkenes coordinated to Palladium are attacked by nucleophiles. Green Chemistry: Future challenges in working with chemical processes, environmental friendly reaction, Nontoxic Solvents and Auxiliaries.