

Content FRO-II 2022:

The Chemistry of Aromatic and Heteroaromatic Compounds

- 1) Hückel-Theory, Aromaticity, Anti-aromaticity, Frost-Cycle, Trivial Names
- 2) Reaction Principle SE_{Ar} , Different Electrophiles, Preparative Aspects
- 3) Diazo-compounds, FC Acylation, FC Alkylation, Formylations.
- 4) Hammett Equation, Synthesis of polyfunctional compounds.
- 5) Sandmeyer, SN_{Ar}
- 6) Birch-reduction, [2+2+2]-cycloaddition.
- 7) Heterocycles I: Trivial names, Structure, Nomenclature, Pharmaceutical Importance; Reactivity, Substitution reactions
- 8) Heterocycles II: Synthesis: 5-ring heterocycles, Indole, Pyrrole, Thiophene, Furane
- 9) Heterocycles III: Synthesis; Pyridine, Quinoline, Isoquinoline

Cycloadditions and Rearrangements

- 10) Diels-Alder Cycloadditions: Regiochemistry, Geometry, endo/exo and kinetic/thermodynamic control, Dienophile and Diene components; Retro-Diels-Alder, Hetero Diels Alder
- 11) [2+3]-cycloadditions, Ozonolysis, "Click-chemistry".
- 12) Sigmatropic Rearrangements, Cope, Claisen,
- 13) Electrocyclization, Nazarov-Reaction, Ene-reaction