Advanced Inorganic Chemistry

No.	Experiment Title
1	**Preparation of alumina-based oxides by the oil-drop sol-gel process.**
1.1.	Preparation of alumina-based oxides.
1.2.	Structural studies.
2	**Synthesis of chiral organic salt (ionic liquid)**
3	**Suzuki - Miyaura reaction – a versatile method for the synthesis of biaryl compounds**
3.1.	Synthesis of $[NiCl_2(PPh_3)_2]$ and $[NiCl_2(PCy_3)_2]$
3.2-3.3.	Suzuki-Miyaura reaction by $[NiCl_2(PR_3)]$ (R = Ph, Cy)
4	**Polynuclear complexes of transition metals**
4.1.	Synthesis of $[Cr_2(CH_3COO)_4(H_2O)_2]$
4.2.	Synthesis of $[Cu(CH_3COO)]_n$
5	**Complexes with transition metal bonds – synthesis of ferrocene**
5.1.	Synthesis of $[Fe(C_5H_5)_2]$
5.2.	Synthesis of $[Fe(C_5H_5)(C_5H_4C(O)Me)]$
5.3.	Synthesis of $[Fe(C_5H_5)(C_5H_4C(O)Me)]$ using microwave irradiation
6.	**Macrocyclic metal complexes - synthesis of Cu(II) phthalocyanines**
7.	**Catalytic oxidation of aromatic hydrocarbons: anthracene epoxidation in the presence of $[VO(acac)_2]$**
7.1.	Synthesis of $[VO(acac)_2]$
7.2.-7.3.	Catalytic oxidation of anthracene in the presence of $[VO(acac)_2]$
8.	**Metal complexes with Schiff bases**
8.1.	Synthesis of [Co(salen)]
8.2.	Oxygen uptake by [Co(salen)]
9.	**Mechanochemical synthesis of porous coordination polymers**
10.	**Solvothermal synthesis of porous coordination polymers** - Synthesis of $[Cu_3(BTC)_2]_n$
11.	**Organometallic and inorganic zinc carboxylates** - Synthesis of $[EtZn_2(\mu_2\text{-}O_2CPh)_3(THF)]$ and $[Zn_4(\mu_4\text{-}O)(\mu_2\text{-}O_2CPh)_6]$
12.	**Synthesis of CdSe quantum dots**