

مفردات الكيمياء اللاعضوية ( أ.م.د.رائد عوض عبيد )

Inorganic Chemistry

- 1- Bonding in *d*- block metal complexes: valence bond theory
- 2- Bonding in d- block metal complexes: crystal field theory
- 3- Bonding in d- block metal complexes: molecular orbital theory
- 4- Magnetic properties
- 5- Electronic spectra

Organometallic Chemistry

- 1- The 18-Electron Rule
- 2- Types of Metal–Ligand Interactions
- 3- The Carbonyl Ligand

References

- Inorganic Chemistry- Bonding by : CATHERINE E. HOUSECROFT , ALAN G. SHARPE
- Organometallic Chemistry by : Gary O. Spessard , Gary L. Miessler

مفردات الكيمياء الفيزيائية ( أ.د.بهجت على سعيد )

1. UV-Vis. spectroscopy.
2. NMR spectroscopy.
3. Infrared spectroscopy.
4. Mass spectroscopy.

Reference:

Introduction to Spectroscopy by Donald Pavia, G. M. Lampman, G. S. Kriz and J. R. Vyvyan

5. Thermodynamics and Chemical Equilibrium.
6. The Structure of the Atom.
7. The structure of molecules.
8. Chemical kinetics.

Reference:

Physical Chemistry by Walter J. Moore

## مفردات الكيمياء الصناعية ( أ.د.محمود شاكر حسين )

- 1- Introduction of polymers: Chapter 1; p(1-36)
- 2- Step polymerization : Chapter 2; p: (39-185)
- 3- Radical chain polymerization : Chapter 3; p (198-295)
- 4- Ionic chain polymerization : Chapter 5 ; p (372-420)
- 5- Chain copolymerization : Chapter 6 ; p (464-485)

### Reference

Principles of polymerization by: George Odian

## مفردات الكيمياء التحليلية ( أ.د.عدنان سلطان عبد النبي )

- 1- Chromatographic Techniques

Recent development in Gas Chromatographic (GC) , Liquid Chromatographic(LC) and High- performance Liquid Chromatographic (HPLC)

### Reference

Principal and practice of analytical chemistry by Douglas A.Skoog , Donald M.West

- 2- Mass spectrometry and its hyphenated techniques
  - Hyphenated techniques like GC-MS , LC-MS-MS and LCP-Mass
  - Quantitative and qualitative analysis using MS .

### Reference

Mass spectrometry :principles and applications by Edmond de Hoffmann and Vincent Stroobant

- 3- Electro analytical methods
  - Voltammetry and amperometry

### References

-Electrochemical methods : fundamentals and applications by Allen J.Band and Larry R.Faulkner

- Principles and practice of analytical chemistry by Douglas A. Skoog , Donalld M. West

- 4- Spectroscopic techniques and applications

\* Recent advancements in Uv-Vis and IR spectroscopy

\* Applications of fluorescence and phosphorescence in chemical analysis

### Reference

Introduction to spectroscopy by Donalld L.Pavia

- 5- Environmental analytical chemistry
- Detection of pollutants and heavy metals in environmental samples

#### Reference

Environmental chemistry – A global perspective by Gary W. Vanloon and Stephen J. Duffy

#### مفردات الكيمياء العضوية ( أ.د. فائزة عبد الكريم ناصر )

- 1- Pyrroles: Reactions and Synthesis
- 2- Thiophenes: Reactions and Synthesis
- 3- Furans: Reactions and Synthesis
- 4- Indoles, Benzo[b]thiophenes, Benzo[b]furans, Isoindoles, Benzo[c]thiophenes and Isobenzofurans ,Reactions and Synthesis
- 5- Reactions and Synthesis of 1,3- and 1,2-Azoles and Benzo-1,3- and -1,2-Azoles
- 6- Purines and pyrimidine: Reactions and Synthesize.
- 7- Heterocycles Containing More Than Two Heteroatoms

#### Reference

Heterocyclic Chemistry by : John A. Jou le , Keith Mills

#### مفردات الكيمياء الحياتية ( أ.د. عباس دواس مطر )

- 1- Amino acids metabolism
- 2- Krebs cycle (reactions , biochemical energy and functions )
- 3- Aromatic amino acids (reactions and classification)
- 4- Disaccharides (chemical structures , reducing ability and reaction )
- 5- Active chemical compounds (classification and biochemical compounds ( classification and biochemical efficacy )

#### References

الكيمياء الحياتية تأليف د. عباس دواس مطر 2016

- Biochemistry by Devlin