

Research Interests of Faculty Members in the Physical Division - Department of Chemistry

1. Dr. Muhamed Abdel Rauf

- a. Removal of pollutants (dyes) from solution
- b. Adsorption
- c. Solvent-solute interactions
- d. Kinetics of chemical reaction
- e. Radiation/photochemistry

2. Dr. Ahmed Al Shamsi

- a. Corrosion of pure metals and alloys, especially of stainless steels
- b. Corrosion inhibitors including inorganic inhibitors

3. Dr. Saeed Bukallah

- a. Preparation, characterization, catalytic activity measurements, and applications of heterogeneous catalysts.
- b. Adsorption and Desorption studies, surface science, dyes and pigments degradations.
- c. Chemical kinetics, surface studies and material science.
- d. Photochemistry and photo-catalytic studies.
- e. Environmental, petro-chemical, and industrial applications of catalysts.

4. Dr. Yaser E. Greish

- a. Chemistry of materials (ceramics and ceramic-polymer composites)
- b. Kinetics of formation of ceramics and composites
- c. Low temperature formation of ceramics and composites
- d. Nanofibers and fiber-reinforced composites
- e. Bioceramics, biomaterials, and biocomposites
- f. In vitro assessment of novel biomaterials
- g. Treatment of Waste Water Through Nanofibrous Membranes

6. Dr. Mohamed Toutounji

- a. Electronic Spectroscopy
- b. Quantum Chemistry
- c. Solvation Dynamics
- d. Thermodynamics (microscopic)
- e. Statistical Mechanics

7. Dr. Nail Saleh

- a. Designing molecular fluorescent sensors for environmental toxic metals.
- b. Designing fluorescent probes for polarity and dynamics of the surrounding simple and complex media.
- c. Developing potential molecular switches.
- d. Designing fluorescent sensing methods in aqueous solutions.
- e. Drug delivery.

8. Dr. Nathir Al Rawashdeh

- a. Material Sciences: Self-Assembled Monolayers (SAMs), Biosensors, Surface-Enhanced Spectroscopy; Corrosion.
- b. Photochemistry and Solar-Energy Conversion of ruthenium complexes.
- c. Thermodynamic, Spectroscopic, and Kinetic Studies of the Inclusion Complexes of Compounds with Macro-Cyclic Host Molecules, such as Cyclodextrins and Cucurbit[6]uril.
- d. Catalytic activity and stability Methyltrioxorhenium(VII) catalyst Inside Cyclodextrin.