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

5. Dr. Mohamed Toutounji
   a. Electronic Spectroscopy
   b. Quantum Chemistry
   c. Solvation Dynamics
   d. Thermodynamics (microscopic)
   e. Statistical Mechanics

6. 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.
c. Thermodynamic, Spectroscopic, and Kinetic Studies of the Inclusion Complexes of Compounds with Macro-Cyclic Host Molecules, such as Cyclodextrins and Cucurbit[6]uril.