CY-508 SURFACE CHEMISTRY AND CATALYSIS

Surface phenomena: Adsorption, solid-liquid interface, solid-gas interface, solid surface area, adhesion and cohesion, nucleation and crystal growth, gel formation.

Colloids and Surfactants: Liquid interfaces, surface tension, Langmuir-Blodgett films, surfactant, detergency, organised molecular assemblies, micro and macro emulsions, colloidal dispersions, coagulation and flocculation. **Catalysis:** Homogeneous and heterogeneous catalysis, catalytic activity, geometric factor in catalysis, supported metal catalysts, catalytic reactors, catalytic preparation, deactivation and regeneration, characterisation of catalyst surfaces, applied catalysis in steam reforming reaction, methanation reaction, Fischer–Tropsch synthesis, ammonia synthesis processes.

Experimental Techniques in Surface Chemistry: Scanning Electron Microscopy (SEM) with Electron Dispersive Spectroscopy (EDS), X-ray diffractometers (XRD), IR and Raman spectroscopy.

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