

Content		Page No.
List of Figures		i-xii
List of Tables		xiii
List of Abbreviations / Symbols		xiv-xvi
Preface		xvii-xix
Chapter – 1	Introduction & Literature Survey	1-38
	1.1 General introduction	1
	1.2 Brief history of sensors	2
	1.3 The sensor system	3
	1.4 Catalyst	13
	1.5 The role of nonmaterials for catalysis and sensing	16
	1.6 The role of coordination polymers for catalysis and sensing	21
	1.7 Nanomaterials and coordination polymers used as artificial enzyme: a substitute of natural enzymes	28
	1.8 Immobilization of biomolecules on nanomaterials	31
	1.9 Motivation and Objective of the thesis	34
	1.10 Benefits of the proposed materials for catalysis and sensing applications	35
Chapter – 2	Experimental Techniques	39-52
	2.1 Characterization Techniques	39
Chapter – 3	One step synthesis of AuNPs@MoS₂-QDs composite as a robust peroxidase- mimetic for instant unaided eye detection of glucose in serum, saliva and tear	53-82
	3.1 Introduction	53
	3.2 Experimental Section	55
	3.3 Results and Discussion	58
	3.4 Conclusions	80
Chapter – 4	A nanoporous palladium(II) bridged coordination polymer acting as a peroxidase mimic in a method for visual detection of glucose in tear and saliva	83-116
	4.1 Introduction	83
	4.2 Experimental	85
	4.3 Results and Discussion	89
	4.4 Conclusions	116
Chapter – 5	Facile and sensitive colorimetric assay of choline based on AuNps@WS₂-QDs as a peroxidase mimetic.	117-140

	5.1 Introduction	117
	5.2 Experimental	119
	5.3 Results and Discussion	122
	5.4 Conclusions	139
Chapter – 6	Colorimetric detection of picric acid using silver nanoparticles modified with 4-amino-3-hydrazino-5-mercapto-1,2,4-triazole	141-158
	6.1 Introduction	141
	6.2 Experimental	143
	6.3 Results and Discussion	145
	6.4 Conclusions	157
Chapter – 7	Nano network of coordination polymer AHMT-Ag for the effective and broad spectrum detection of 6-mercaptopurine in urine and blood serum Nano network	159-190
	7.1 Introduction	159
	7.2 Experimental	160
	7.3 Results and Discussion	164
	7.4 Conclusions	190
Chapter – 8	Summary and Future Work	191-196
References		197-216
List of Publications		