APPENDIX

APPENDIX A: CALIBRATION CURVES AND XRD PATTERNS

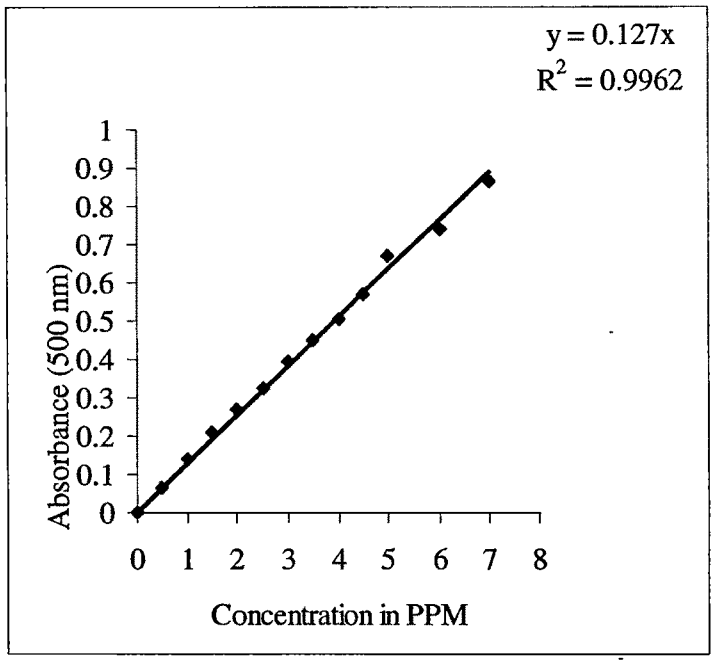

Figure A-1 Phenol calibration curve

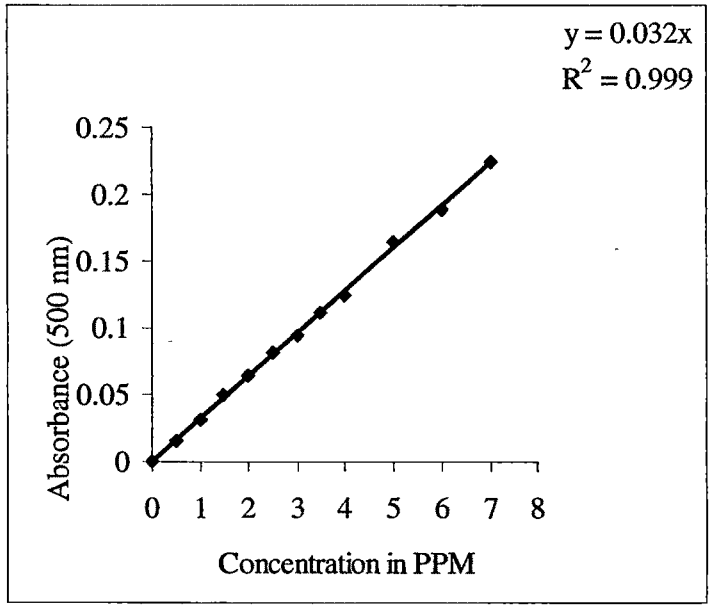

Figure A-2 Catechol calibration curve

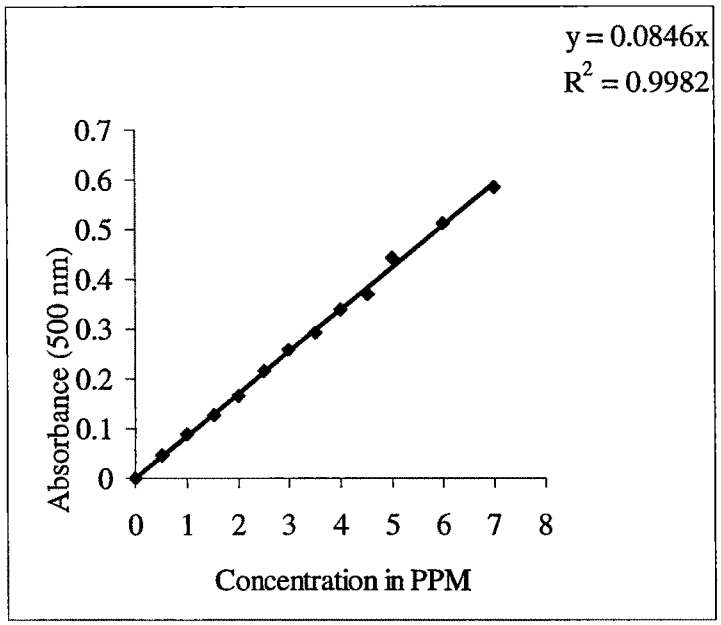

Figure A-3 Resorcinol calibration curve

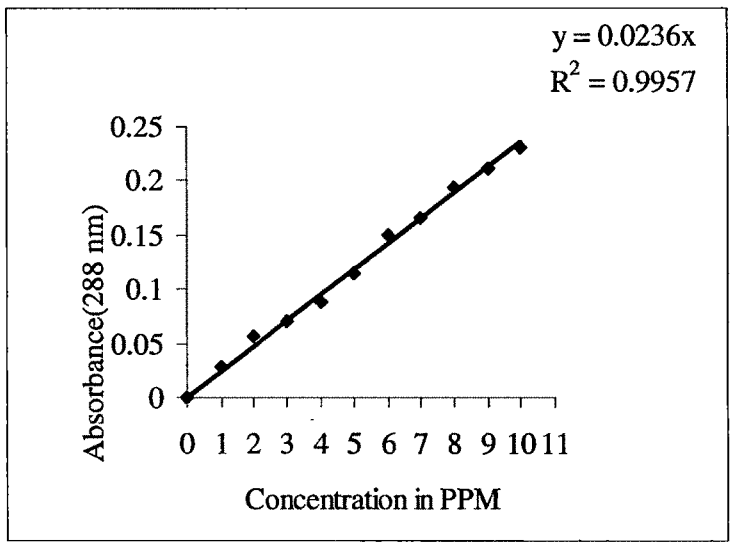

Figure A-4 Hydroquinone calibration curve

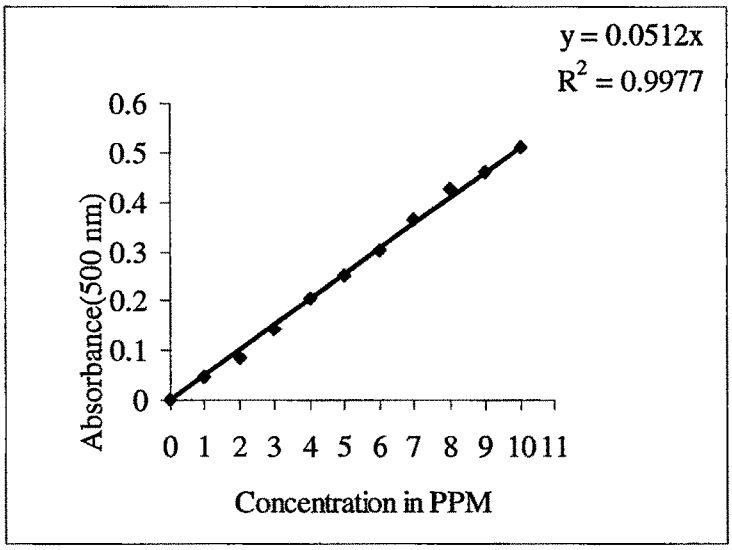

Figure A-5 2-Aminophenol calibration curve

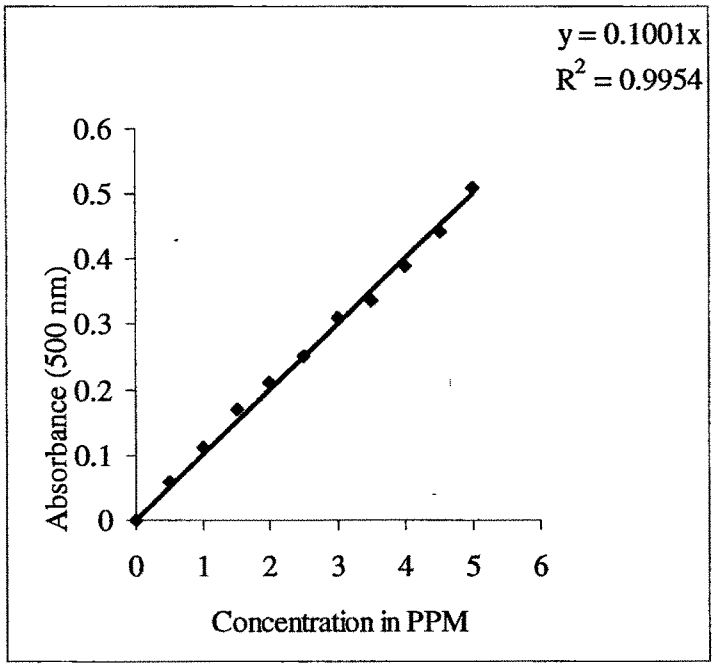

Figure A-6 3-Aminopheol calibration curve

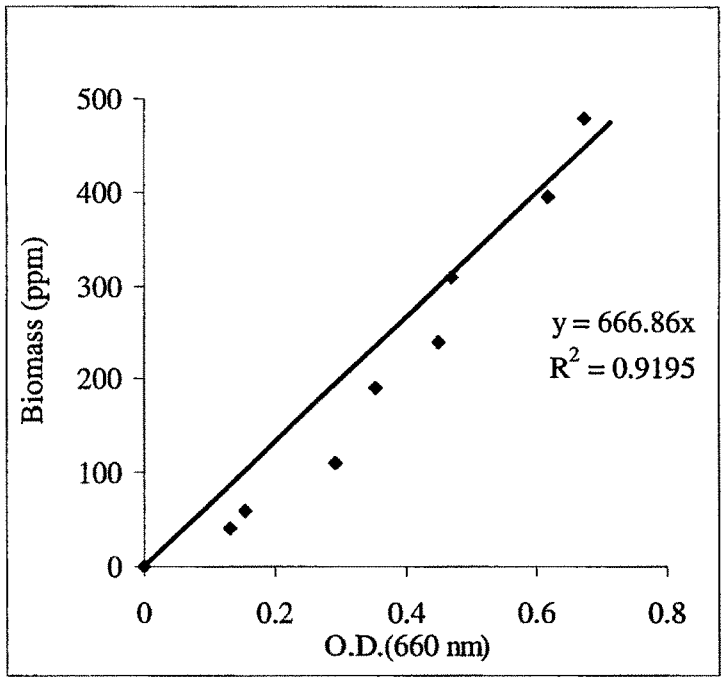

Figure A-7 Calibration curve for relationship of Optical density with biomass density of *P. aeruginosa* (ATCC 9027) for Phenol removal

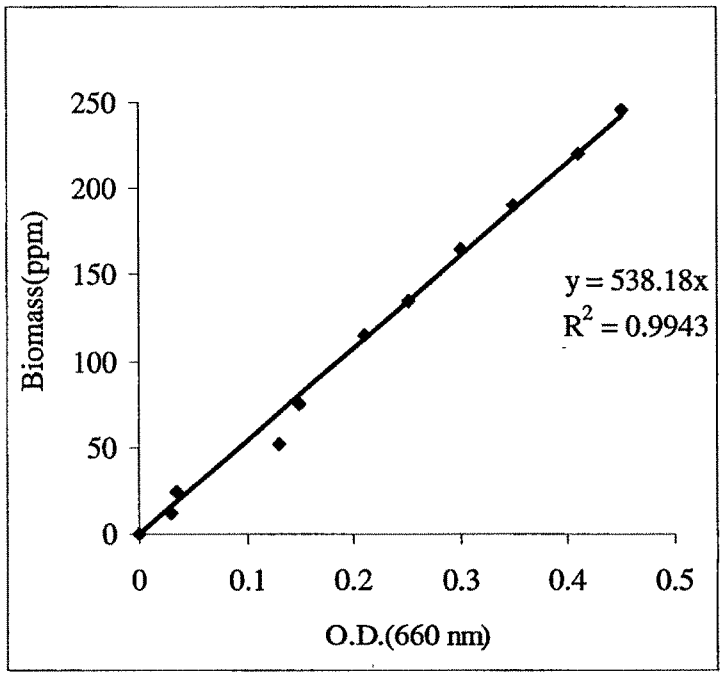

Figure A-8 Calibration curve for relationship of Optical density with biomass density of *P. aeruginosa* (ATCC 9027) for 3-Aminophenol removal

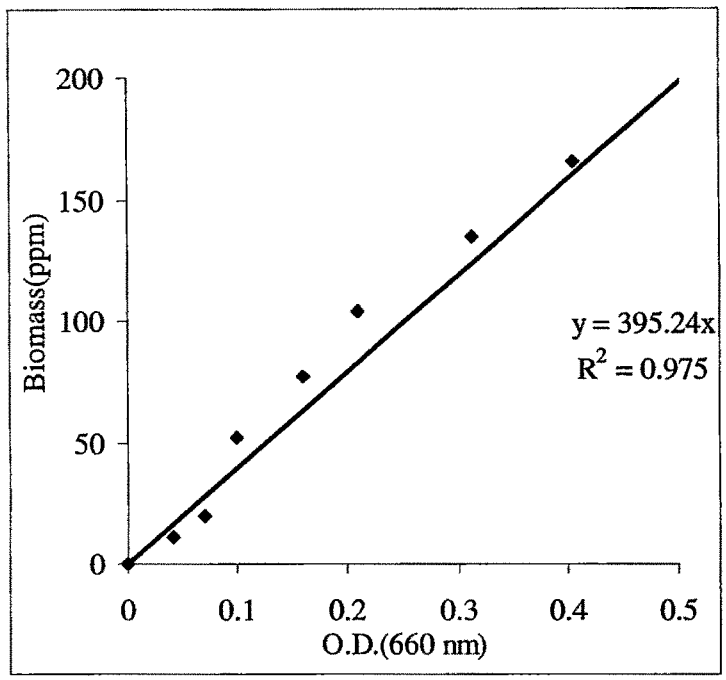

Figure A-9 Calibration curve for relationship of Optical density with biomass density of *P. aeruginosa* (ATCC 9027) for Catechol removal

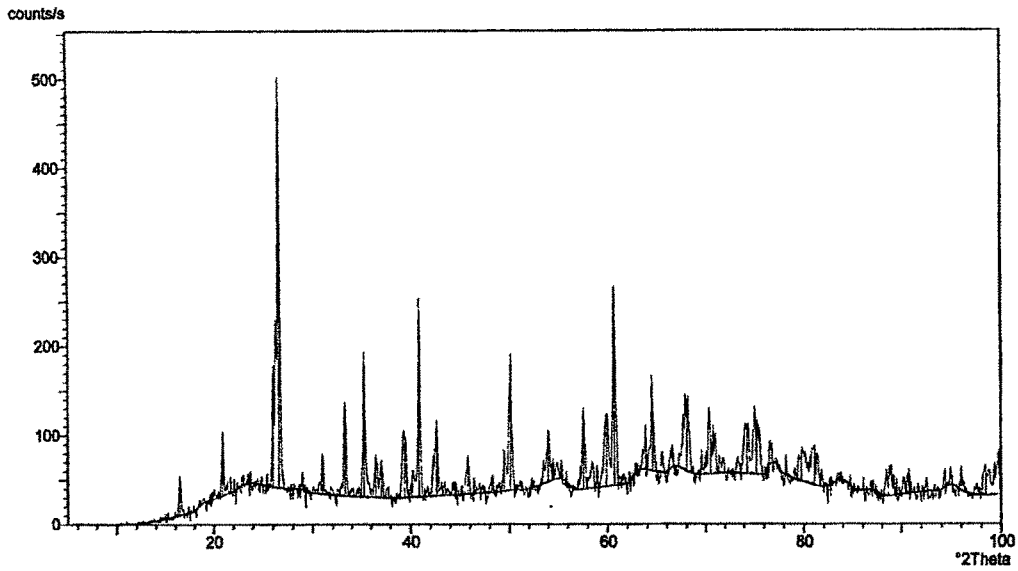

Figure A-10 X-ray diffraction pattern of fly ash A

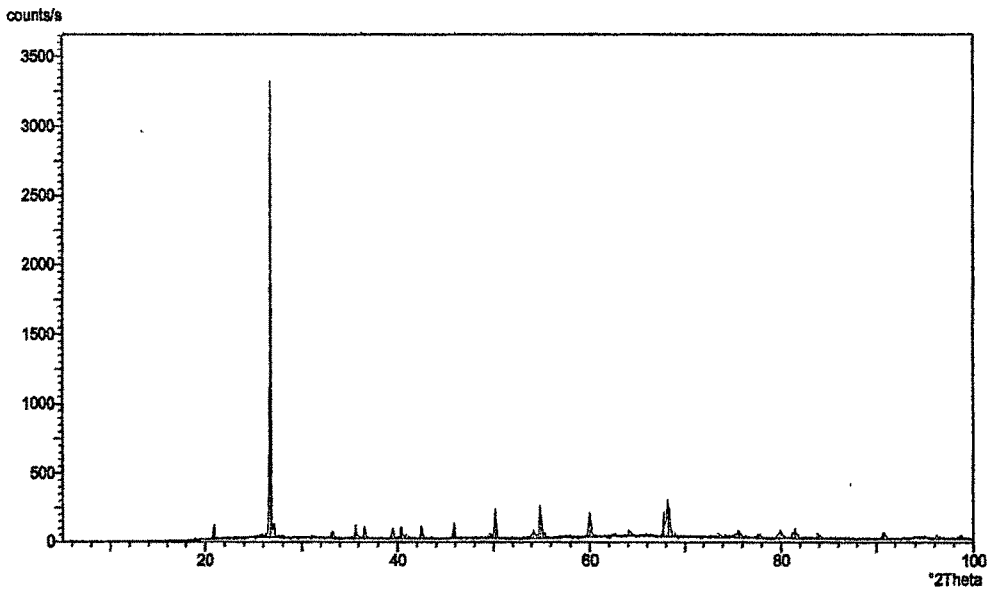

Figure A-11 X-ray diffraction pattern of fly ash B

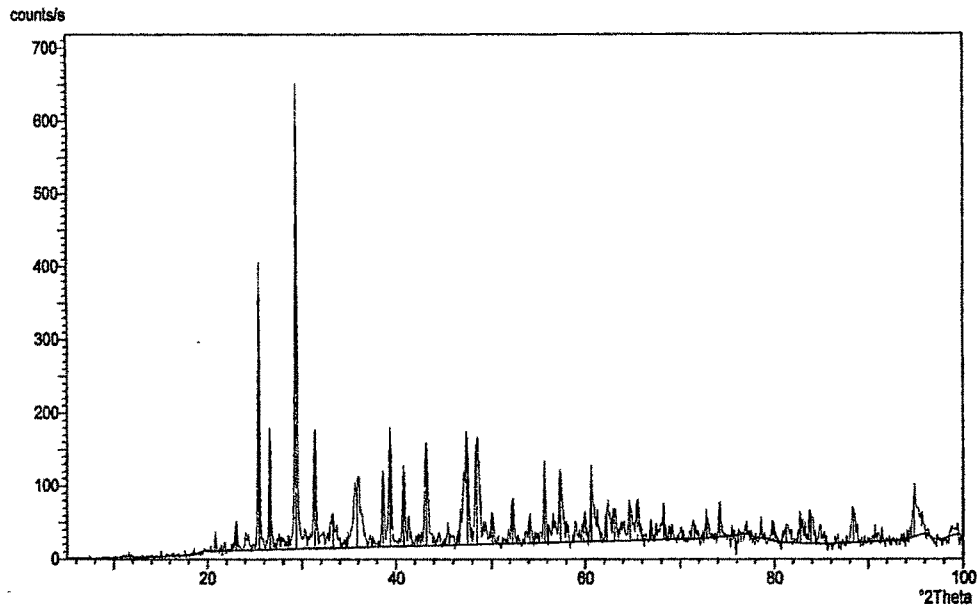

Figure A-12 X-ray diffraction pattern of fly ash D

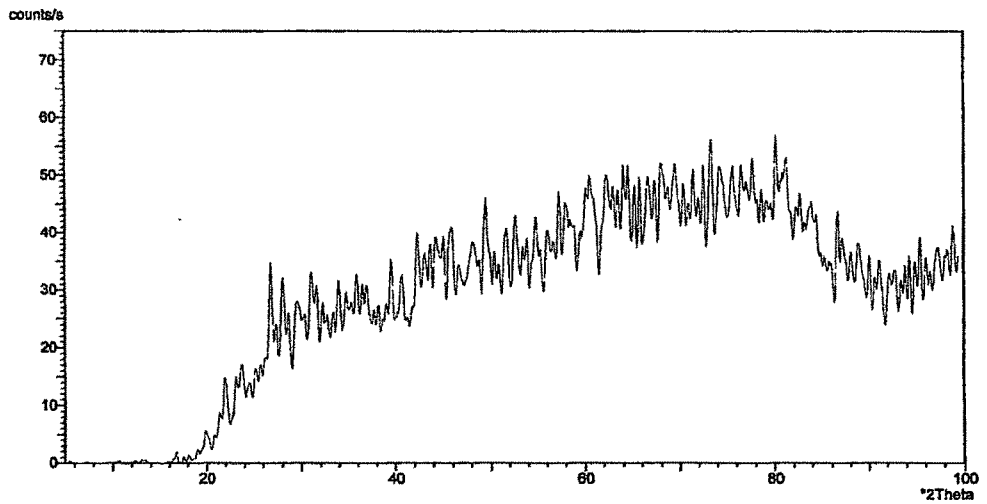

Figure A-13 X-ray diffraction pattern of fly ash C*

[* No peak indicates that fly ash C is an amorphous material]

Phase identification in different fly ash using X-ray diffraction studies shown in Fig.A-9 to A-12

Compound	Pure component XRD		Fly ash A XRD		Fly ash B XRD		Fly ash D XRD	
	d-spacing value (°A)	**% Relative Intensity**	**d-spacing value (°A)**	**% Relative Intensity**	**d-spacing value (°A)**	**% Relative Intensity**	**d-spacing value (°A)**	**% Relative Intensity**
SiO_2	4.2549	16	4.235	16.3	3.33	100	1.985	3.6
(Quartz)	3.3434	100	3.333	100	1.97	3.71	1.08	1.66
	2.4568	9			1.23	0.86		
	2.2361	4			1.18	1.64		
	1.9798	4			1.15	0.89		
	1.2283	1			1.08	1.56		
	1.1839	2			1.014	0.96		
	1.1529	1						
	1.0815	2						
	1.0149	1						
β-SiO_2	2.308	16	1.542	17.56	1.668	5.37	2.324	16.5
	1.663	6						
	1.566	19						
δ^* -Al_2O_3	2.808	10	2.876	9.83	1.381	5.32	1.396	4.85
	1.907	5	1.839	10.3				
	1.799	10						
	1.417	5						
CaO	1.2026	5	1.101	5	-	-	1.16	4.73
	1.1036	5						
TiO_2	2.431	10	2.434	10.51	1.198	1.64	1.656	19.8
(Anatase)	1.6665	20						
	1.1894	<2						
TiO_2	1.2739	1	1.035	3.63	1.285	0.83	1.104	7.47
(Rutile)	1.0936	8						
	1.0271	4						
Mullite	1.5999	20	1.597	18.83	1.03	1.45	-	-
($Al_6Si_2O_{13}$)	1.0348	<2						
Hematite	2.285	2	1.2	7.43	2.277	2.32	-	-
(Fe_2O_3)	1.189	8						
α-MnO_2	1.3742	5	1.33	8.5	1.381	5.32	1.317	3.07
	1.2994	8						
	1.2844	3						

Note: Other peaks may be of null or of other compounds.

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