

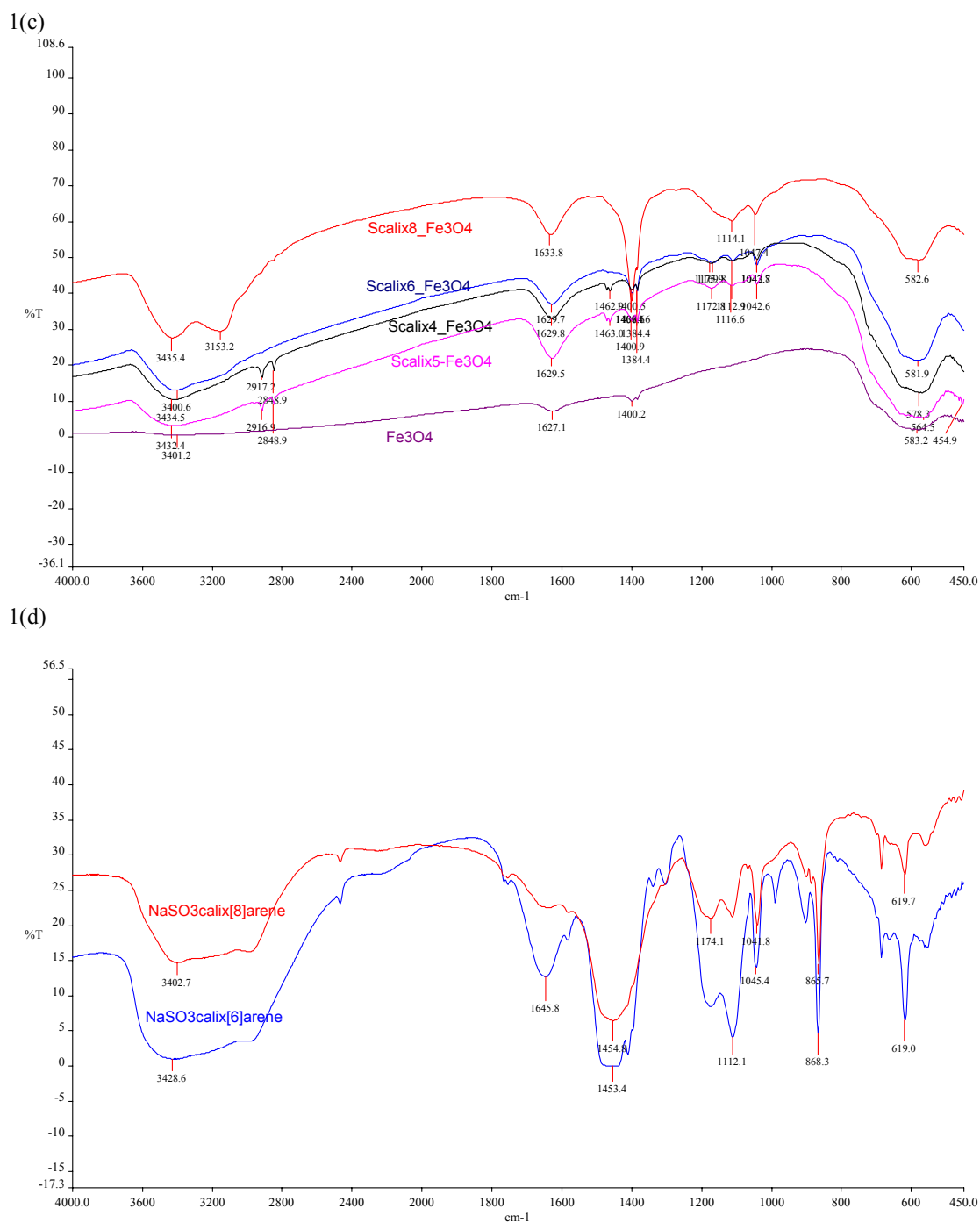


Figure 1: FTIR spectra of (a) *p*-benzyl-calix[4,5,6 and 8]arene sulfonates coated magnetite; (b) *p*-benzyl-calix[4,5,6 and 8]arene sulfonates (c) *p*-sulfonato-calix[4,5,6,8]arene coated magnetite (d) *p*-sulfonato-calix[6,8]arene

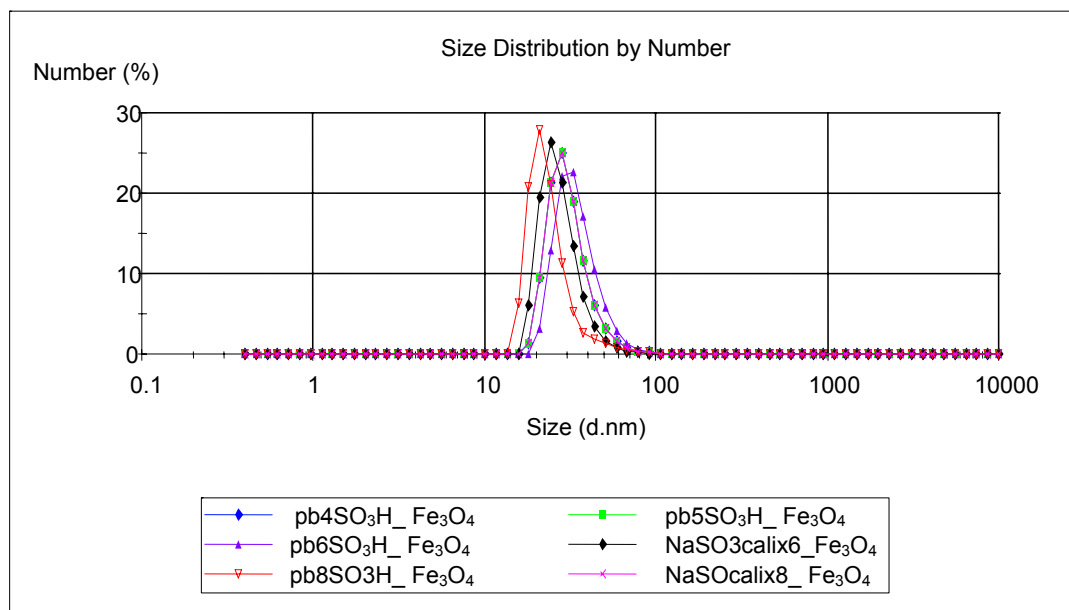


Figure 2: Particle size distributions of *p*-sulfonato-calix[6,8]arene and sulfonated *p*-benzylcalix[4,5,6 and 8]arene coated magnetite

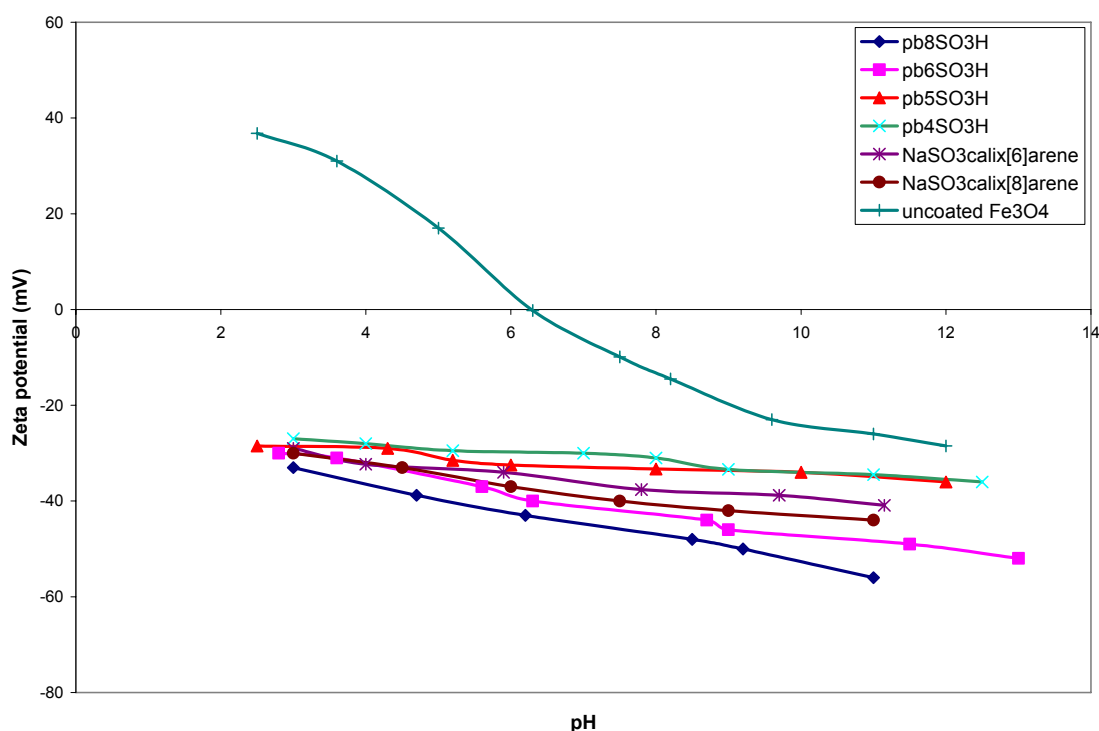


Figure 3: Zeta potential of magnetite nanoparticles and *p*-sulfonato-calix[6,8]arene and sulfonated *p*-benzylcalix[4,5,6 and 8]arene coated magnetite nanoparticles as a function of pH value.

Table 1. The d-spacing values (nm) calculated from the electron diffraction patterns and the standard atomic spacing for Fe₃O₄ along with respective *hkl* indexes from the JCPDS card (19-0629)

Surfactant	Calculated d spacing						JCPDS data for Fe ₃ O ₄	<i>hkl</i>
	Scalix6	Scalix8	Pb4SO ₃ H	Pb5SO ₃ H	Pb6SO ₃ H	Pb8SO ₃ H		
	0.4841	0.4872	0.4910	0.4863	0.4876	0.4797	0.4852	111
	0.3056	0.2986	0.2990	0.2950	0.2900	0.3075	0.2967	220
	0.2598	0.2598	0.2556	0.2590	0.2550	0.2598	0.2532	311
	0.2121	0.2115	0.2110	0.2135	0.2145	0.2100	0.2099	400
	0.1743	0.1751	0.1725	0.1776	0.1730	0.1750	0.1714	422
	0.1632	0.1662	0.1660	0.1655	0.1622	0.1655	0.1615	511

Scalix6 = sulfonatocalix[6]arene

Scalix8 = sulfonatocalix[8]arene

pb4SO₃H = *p*-benzyl sulfonic acid calix[4]arene

pb5SO₃H = *p*-benzyl sulfonic acid calix[5]arene

pb6SO₃H = *p*-benzyl sulfonic acid calix[6]arene

pb8SO₃H = *p*-benzyl sulfonic acid calix[8]arene

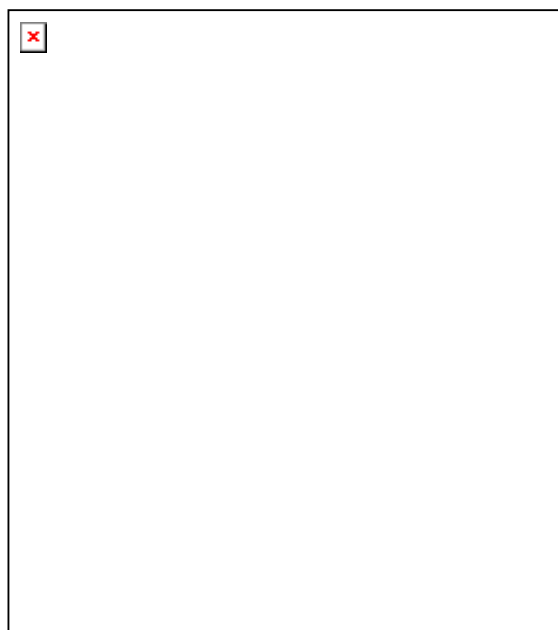


Figure 4: Typical Diffraction pattern of calix[n]arenes coated magnetite nanoparticles