**Table S1 Peak lists of *Ss*- AgNPs by XRD analysis**

**Peak list**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| No. | 2-theta(deg) | d(ang.) | Height(cps) | FWHM(deg) | Int. I(cps deg) | Int. W(deg) | Asym. factor |
| 1 | 19.544(5) | 4.5384(11) | 2272(195) | 0.069(12) | 204(25) | 0.090(19) | 4(5) |
| 2 | 21.59(2) | 4.112(4) | 1959(181) | 0.09(2) | 190(34) | 0.10(3) | 1.5(15) |
| 3 | 24.231(7) | 3.6701(10) | 1685(168) | 0.13(2) | 253(36) | 0.15(4) | 5(5) |
| 4 | 29.584(9) | 3.0170(9) | 8345(373) | 0.105(6) | 1124(26) | 0.135(9) | 4(2) |
| 5 | 31.803(11) | 2.8114(9) | 4255(266) | 0.068(10) | 449(29) | 0.106(14) | 1.1(9) |
| 6 | 32.689(8) | 2.7372(7) | 3864(254) | 0.101(12) | 517(27) | 0.134(16) | 1.2(4) |
| 7 | 33.39(2) | 2.6811(17) | 482(90) | 0.05(2) | 27(13) | 0.05(4) | 5(17) |
| 8 | 35.357(5) | 2.5365(4) | 6301(324) | 0.08(2) | 724(168) | 0.11(3) | 0.8(4) |
| 9 | 35.427(3) | 2.5317(2) | 9825(405) | 0.043(6) | 592(167) | 0.060(19) | 0.8(4) |
| 10 | 38.040(6) | 2.3635(4) | 1700(168) | 0.10(2) | 302(21) | 0.18(3) | 0.6(6) |
| 11 | 38.976(8) | 2.3089(4) | 3183(230) | 0.094(9) | 423(18) | 0.133(15) | 0.7(3) |
| 12 | 39.752(13) | 2.2656(7) | 530(94) | 0.08(3) | 53(15) | 0.10(5) | 0.9(5) |
| 13 | 39.990(10) | 2.2527(5) | 2006(183) | 0.093(11) | 248(21) | 0.12(2) | 0.9(5) |
| 14 | 41.510(17) | 2.1736(9) | 832(118) | 0.10(3) | 145(13) | 0.17(4) | 0.9(9) |
| 15 | 42.603(10) | 2.1204(5) | 1812(174) | 0.056(13) | 181(12) | 0.100(16) | 0.9(7) |
| 16 | 43.373(2) | 2.08452(10) | 9163(391) | 0.050(3) | 702(16) | 0.077(5) | 2.0(5) |
| 17 | 44.18(6) | 2.048(3) | 472(89) | 0.35(10) | 302(24) | 0.64(17) | 0.6(6) |
| 18 | 46.112(6) | 1.9669(2) | 2680(211) | 0.078(12) | 402(16) | 0.150(18) | 0.9(3) |
| 19 | 47.676(12) | 1.9059(5) | 1475(157) | 0.068(16) | 165(13) | 0.11(2) | 1.5(15) |
| 20 | 48.345(10) | 1.8811(4) | 1578(162) | 0.078(15) | 203(14) | 0.13(2) | 1.4(9) |
| 21 | 48.985(4) | 1.85801(13) | 1675(167) | 0.089(11) | 233(13) | 0.14(2) | 0.9(5) |
| 22 | 49.641(8) | 1.8350(3) | 3080(227) | 0.083(7) | 362(15) | 0.118(14) | 1.0(4) |
| 23 | 50.89(7) | 1.793(2) | 134(47) | 0.8(2) | 172(25) | 1.3(6) | 0.9(5) |
| 24 | 52.230(6) | 1.74993(19) | 652(104) | 0.081(19) | 73(11) | 0.11(3) | 2(2) |
| 25 | 53.10(2) | 1.7233(6) | 776(114) | 0.12(2) | 148(12) | 0.19(4) | 1.7(15) |
| 26 | 53.706(8) | 1.7053(2) | 1995(182) | 0.094(11) | 263(17) | 0.13(2) | 0.9(3) |
| 27 | 54.76(6) | 1.6750(17) | 311(72) | 0.76(10) | 333(32) | 1.1(4) | 0.9(3) |
| 28 | 55.110(7) | 1.6651(2) | 684(107) | 0.062(17) | 59(16) | 0.09(4) | 0.9(3) |
| 29 | 55.998(12) | 1.6408(3) | 1169(140) | 0.055(13) | 106(11) | 0.09(2) | 0.7(7) |
| 30 | 58.67(6) | 1.5722(15) | 130(46) | 0.8(3) | 200(32) | 1.5(8) | 5(12) |
| 31 | 61.39(3) | 1.5091(7) | 247(64) | 0.17(6) | 54(11) | 0.22(10) | 1.7(11) |
| 32 | 61.917(13) | 1.4974(3) | 1426(154) | 0.105(14) | 190(16) | 0.13(3) | 1.7(11) |
| 33 | 62.491(16) | 1.4850(3) | 821(117) | 0.115(13) | 104(13) | 0.13(3) | 0.9(6) |
| 34 | 65.472(15) | 1.4244(3) | 651(104) | 0.11(2) | 109(11) | 0.17(4) | 2.1(16) |
| 35 | 67.259(12) | 1.3909(2) | 1686(168) | 0.106(14) | 246(16) | 0.15(2) | 0.9(5) |
| 36 | 68.59(2) | 1.3671(4) | 324(73) | 0.07(3) | 23(10) | 0.07(5) | 3(6) |

**Table S2 Peak lists of *Ssp*- AgNPs by XRD analysis**

**Peak list**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| No. | 2-theta(deg) | d(ang.) | Height(cps) | FWHM(deg) | Int. I(cps deg) | Int. W(deg) | Asym. factor |
| 1 | 19.543(10) | 4.539(2) | 1105(136) | 0.16(3) | 187(41) | 0.17(6) | 2(2) |
| 2 | 21.619(4) | 4.1073(7) | 3443(240) | 0.125(10) | 459(38) | 0.13(2) | 4(2) |
| 3 | 24.168(11) | 3.6795(16) | 830(118) | 0.16(3) | 145(21) | 0.17(5) | 1.3(15) |
| 4 | 24.321(2) | 3.6567(3) | 2906(220) | 0.038(4) | 125(12) | 0.043(7) | 1.3(15) |
| 5 | 29.538(4) | 3.0216(4) | 4158(263) | 0.126(12) | 757(33) | 0.182(19) | 0.5(2) |
| 6 | 31.817(9) | 2.8102(7) | 2309(196) | 0.110(12) | 355(19) | 0.15(2) | 4(2) |
| 7 | 32.691(9) | 2.7370(7) | 2614(209) | 0.115(12) | 432(20) | 0.17(2) | 2.2(9) |
| 8 | 35.392(4) | 2.5341(3) | 7070(343) | 0.049(9) | 602(26) | 0.085(8) | 1.4(7) |
| 9 | 38.976(8) | 2.3089(4) | 3529(243) | 0.077(7) | 353(19) | 0.100(12) | 0.6(3) |
| 10 | 39.838(14) | 2.2610(7) | 496(91) | 0.12(3) | 70(12) | 0.14(5) | 2.6(9) |
| 11 | 40.003(5) | 2.2520(2) | 2938(221) | 0.080(6) | 288(12) | 0.098(12) | 2.6(9) |
| 12 | 41.512(6) | 2.1735(3) | 2786(215) | 0.061(10) | 287(15) | 0.103(13) | 1.2(5) |
| 13 | 42.601(18) | 2.1205(9) | 841(118) | 0.09(2) | 131(12) | 0.16(4) | 0.8(9) |
| 14 | 43.350(3) | 2.08555(13) | 2234(193) | 0.103(8) | 311(13) | 0.139(18) | 1.0(4) |
| 15 | 46.095(13) | 1.9675(5) | 1150(138) | 0.073(16) | 129(13) | 0.11(3) | 1.3(11) |
| 16 | 47.640(19) | 1.9073(7) | 806(116) | 0.104(19) | 102(16) | 0.13(4) | 0.7(7) |
| 17 | 48.329(6) | 1.8817(2) | 2138(189) | 0.036(11) | 132(11) | 0.062(10) | 1.7(15) |
| 18 | 48.994(6) | 1.8577(2) | 1792(173) | 0.065(14) | 237(16) | 0.13(2) | 1.6(9) |
| 19 | 49.655(9) | 1.8345(3) | 1687(168) | 0.132(9) | 241(15) | 0.14(2) | 1.8(6) |
| 20 | 52.22(2) | 1.7503(7) | 491(90) | 0.12(3) | 100(17) | 0.20(7) | 1.0(6) |
| 21 | 53.061(17) | 1.7245(5) | 806(116) | 0.09(2) | 101(12) | 0.13(3) | 1.5(15) |
| 22 | 53.686(11) | 1.7059(3) | 1345(150) | 0.108(14) | 197(14) | 0.15(3) | 1.5(8) |
| 23 | 54.81(3) | 1.6736(7) | 344(76) | 0.45(9) | 195(27) | 0.6(2) | 0.5(7) |
| 24 | 61.885(7) | 1.49808(16) | 1193(141) | 0.071(13) | 147(10) | 0.12(2) | 1.0(4) |
| 25 | 62.436(4) | 1.48617(9) | 889(122) | 0.105(11) | 99(12) | 0.11(3) | 0.5(3) |
| 26 | 65.44(2) | 1.4250(5) | 416(83) | 0.12(2) | 55(11) | 0.13(5) | 0.6(5) |
| 27 | 67.226(10) | 1.39144(18) | 620(102) | 0.044(17) | 43(9) | 0.07(3) | 1.1(11) |
| 28 | 67.49(2) | 1.3867(4) | 394(81) | 0.10(3) | 62(11) | 0.16(6) | 1.1(11) |
| 29 | 68.563(19) | 1.3675(3) | 154(51) | 0.10(6) | 18(9) | 0.12(10) | 3(13) |
| 30 | 69.63(3) | 1.3492(4) | 416(83) | 0.11(4) | 78(11) | 0.19(6) | 0.7(9) |