

Table 1 - d-spacing in Ångström of nanospheres of this study compared to published values for Pb-oxides, Pb-sulphide, cubic Pb and cerrusite and angles between adjacent planes for phase identification

d(hkl) observed				d(hkl) calculated								
HW19-01-M03		HW19-01-M02		Pb	PbS	PbO		PbO ₂		Pb ₂ O ₃	Pb ₃ O ₄	PbCO ₃
FIB #7180 Phase 3	FIB #7181 Phase 4	Phase 6	FIB #7182 Phase 5	Cubic Metal	Cubic Galena	Orthorhombic Massicot	Tetragonal litharge	Orthorhombic Scrutinyite	Tetragonal Platterite	Monoclinic Sesquioxide	Tetragonal Minium	Orthorhombic Cerussite
Pb ₃ O ₄	Pb ₃ O ₄	PbCO ₃	Pb cubic	<i>a</i> = <i>b</i> = <i>c</i> = 4.9505	<i>a</i> = <i>b</i> = <i>c</i> = 5.9362	<i>a</i> = 5.8931 <i>b</i> = 5.4904 <i>c</i> = 4.7528	<i>a</i> = <i>b</i> = 3.9744 <i>c</i> = 5.0220	<i>a</i> = 4.9858 <i>b</i> = 5.6250 <i>c</i> = 5.4626	<i>a</i> = <i>b</i> = 4.9577 <i>c</i> = 3.3879	<i>a</i> = 7.814 <i>b</i> = 5.627 <i>c</i> = 8.465	<i>a</i> = <i>b</i> = 8.811 <i>c</i> = 6.5630	<i>a</i> = 5.173 <i>b</i> = 8.505 <i>c</i> = 6.111
2.91 (112)	3.98 (210)	3.77 (101)	2.88 (-1-11)	2.858 (-1-11)	4.196	4.019	3.974			3.871	3.94 (210)	3.957 (101)
	2.967				2.948	3.117			3.754	2.903 (112)		
2.61 (-310)	3.05 (122)	2.84 (002)	2.48 (002)	2.475 (002)		2.747	2.81		2.797	2.813	2.521 (-112)	3.067 (002)
									3.028	2.903 (112)		
									2.952	2.786 (-310)		
2.16 (-222)	2.67 (-112)	2.60 (200)	1.89 (-2-20)	1.75 (-2-20)		2.654			2.747		2.489	1.902 (-10-3)
							2.668					
							2.178	2.217		2.027 (-302)		
1.80 (-40-2)	2.19 (-302)				1.877		2.123			2.259 (-222)		
		1.76 (-10-3)			1.789			1.795	1.753		1.829 (-40-2)	
Angles between adjacent planes				Bouad et al. (2003) ³	Zeuthen et al. (2019)	Garneir et al. (1990)	Boher et al. (1985)	Grocholski et al. (2014)	Bolzan et al. (1997)	Bouvaist and Weigel (1970)	Gavarri and Weigel (1975) ¹	Minch et al. (2010) ²
Pb ₃ O ₄		Pb ₃ O ₄		PbCO ₃		Pb cubic						
Planes	Calculated ¹	Observed	Planes	Calculated ¹	Observed	Planes	Calculated ²	Observed	Planes	Calculated ³	Observed	
-222 112	52.47°	54.5°	112 210	58.6°	59.2°	-101 002	49.82°	48.6°	-1-11 002	54.74°	54.8°	
-222 -310	49.56°	47.4°	122 -112	41.5°	39.3°	-101 -200	40.18°	40.9°	111 002	54.75°	53.3°	
-40-2 -310	38.03°	37.9°	-112 -302	31.3°	33.3°	-10-3 -10-1	28.28°	27°	-1-11 -1-1-1	70.53°	70.46°	
-40-2 -1-1-2	39.94°	40.40°	-302 -2-10	44.9°	48.2°	-10-3 00-2	21.54°	19.4°				