

Table S1. In-situ LA-ICP-MS S isotope and trace element compositions of pyrite from the Lijiapuzi gold deposit.

No.		$\delta^{34}\text{S}$ /‰	Co /ppm	Ni /ppm	Cu /ppm	As /ppm	Mo /ppm	Ag /ppm	Sb /ppm	Au /ppm	Pb /ppm
P1-1	Py1	11.03	3.32	190.83	0.04	0.1	0.059	5.81	1.57	-	0.23
P1-2	Py1	11.27	14.84	1669.95	0.52	0.9	0.037	-	0.58	2.6	1.74
P1-3	Py1	9.46	0.87	4.80	0.83	0.5	0.015	6.24	1.36	2.9	1.85
P1-4	Py1	9.55	0.90	9.31	1.61	5.2	-	7.01	3.43	-	17.22
P1-5	Py1	9.19	3.92	144.92	0.22	12.3	0.018	-	8.48	-	0.63
P1-6	Py1	9.46	1.21	222.52	0.62	7.4	0.022	-	0.09	-	1.18
P12-1	Py2	11.12	12.07	156.55	3.15	2.2	0.028	0.81	8.24	7.4	46.99
P12-2	Py1	10.75	6.33	210.84	1.18	2.2	0.015	-	2.07	2.4	22.05
P12-3	Py1	9.62	4.79	571.52	5.59	6.7	0.023	5.10	12.67	-	34.63
P12-5	Py2	11.49	4.65	423.65	9.50	6.0	0.003	3.60	11.80	8.1	96.98
P12-6	Py2	11.10	1.92	334.97	1.23	2.6	-	3.27	2.51	5.7	22.09
P21-1	Py1	11.04	147.29	5.11	2.20	11.1	0.009	12.74	7.66	2.9	64.92
P21-2	Py2	11.04	242.98	4.47	3.21	16.8	-	15.27	29.57	41.3	38.64
P21-3	Py1	10.33	199.10	3.46	0.48	35.7	0.003	-	0.73	-	10.49
P21-4	Py2	10.19	74.09	12.66	1.36	7.3	0.011	18.35	11.53	21.2	34.15
P21-5	Py2	11.15	217.70	4.28	0.63	73.9	0.011	7.49	27.67	61.3	10.12
P22-1	Py1	9.19	44.21	346.52	0.32	3.3	0.004	0.13	4.38	-	21.36
P22-2	Py1	9.80	24.07	166.34	1.39	2.0	0.012	-	3.48	-	17.30
P22-3	Py2	9.49	53.89	7.32	1.66	3.6	0.009	1.12	13.73	29.1	32.42
P22-4	Py1	9.81	492.85	6.22	0.06	6.0	-	-	0.26	-	0.16
P22-5	Py1	9.75	346.93	1.54	0.09	36.9	-	-	0.16	-	0.16
P22-6	Py1	9.85	1.57	43.69	-	0.3	0.009	-	0.00	1.7	0.36
P3-1	Py2	10.88	175.58	80.07	0.10	135.5	-	4.71	0.40	7.5	1.25
P3-2	Py1	10.81	177.86	80.82	0.06	86.8	0.007	1.39	3.40	-	0.64
P3-3	Py2	10.97	315.41	250.53	0.13	7.2	-	3.05	1.05	5.6	0.68
P3-4	Py1	10.99	321.03	157.10	0.04	14.1	0.011	2.36	0.85	2.8	0.74
P3-5	Py2	10.79	245.25	315.46	4.99	14.5	0.013	9.48	18.41	8.7	131.19
P31-1	Py1	10.98	333.00	140.03	0.31	16.9	0.003	5.06	10.02	-	1.61
P31-2	Py1	11.16	255.94	127.32	0.06	13.7	-	0.69	0.00	-	0.45
P31-3	Py1	11.24	225.12	154.13	0.00	6.4	-	-	0.00	-	0.20
P31-4	Py1	11.12	236.05	123.18	0.88	42.9	-	-	55.06	-	10.87
P31-5	Py1	11.20	245.52	131.62	-	16.1	0.011	1.18	0.00	-	0.11
P32-1	Py1	11.03	224.16	92.41	0.09	21.1	-	3.35	0.00	-	0.30
P32-2	Py1	11.03	236.32	109.62	0.37	51.8	-	5.04	4.53	-	0.73
P32-3	Py1	10.88	206.84	189.39	0.28	7.0	0.004	4.65	0.00	-	0.94
P32-4	Py1	10.69	162.88	98.81	0.19	341.8	0.000	1.42	0.50	-	0.57
P32-5	Py1	10.79	203.26	108.88	0.35	78.7	0.019	1.34	1.36	-	5.40