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Supplement of

Two new minerals, badengzhuite, TiP , and zhiqinite, $TiSi_2$, from the Cr-11 chromitite orebody, Luobusa ophiolite, Tibet, China: is this evidence for super-reduced mantle-derived fluids?

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1 **Supplementary Materials**

2 **Two new minerals, badengzhuite, TiP, and zhiqinite, TiSi₂, from the Cr-11 chromitite**
3 **orebody, Luobusa ophiolite, Tibet, China: Evidence for super-reduced mantle-derived**
4 **fluids?**

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7
8 **Tables**

9 **Table S1.** X-ray powder diffraction data obtained by simulation for badengzhuite (CuK α_1
10 radiation)

11 **Table S2.** X-ray powder diffraction data obtained by simulation for zhiqinite(CuK α_1 radiation)

12 **Figures**

13 **Figure S1.** (a) Exposure showing the Cr-11 chromitite orebody from which badengzhuite and
14 zhiqinite were recovered. Lenses of the chromitite are enveloped by dunite. (b) disseminated
15 chromian spinel with olivine in dunite, (c) Moderately disseminated chromian spinel in layer
16 contacting with nodular material.

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19 eskolaite surrounded by chromite. Image taken at the Center for Advanced Research on the
20 Mantle.

21 **Figure S3.** EDX spectra for badengzhuite at point #426 in foil #5358 obtained at the Istituto
22 Italiano di Tecnologia (IIT), Center for Nanotechnology Innovation@NEST.

23 **Figure S4.** EDX spectra for zhiqinite at point #428 in foil #5358 obtained at the Istituto Italiano
24 di Tecnologia (IIT), Center for Nanotechnology Innovation@NEST.

25 **Figure S5.** Simulated powder X-ray diffraction pattern for badengzhuite with CuK α_1 radiation.

26 **Figure S6.** Simulated powder X-ray diffraction pattern for zhiqinite with CuK α_1 radiation.

27 **Table S1.** X-ray powder diffraction data obtained by simulation for badengzhuite (CuK α_1
28 radiation)

29	<i>I</i> /rel	2θ (°)	<i>d</i> (Å)	<i>h</i>	<i>k</i>	<i>l</i>
30	14.33	29.53	3.022	1	0	0
31	5.70	30.38	2.940	0	0	4
32	25.92	30.51	2.927	1	0	1
33	31.15	33.30	2.688	1	0	2
34	100.00	37.55	2.394	1	0	3
35	33.33	42.88	2.107	1	0	4
36	0.25	46.28	1.960	0	0	6
37	25.51	49.04	1.856	1	0	5
38	43.91	52.39	1.745	1	1	0
39	0.32	54.83	1.673	1	1	2
40	7.22	55.86	1.644	1	0	6
41	1.14	61.29	1.511	2	0	0
42	4.48	61.77	1.501	1	1	4
43	2.97	61.85	1.499	2	0	1
44	6.46	63.20	1.470	0	0	8
45	5.00	63.28	1.468	1	0	7
46	2.29	63.51	1.464	2	0	2
47	10.92	66.23	1.410	2	0	3
48	5.15	69.94	1.344	2	0	4
49	1.10	71.28	1.322	1	0	8
50	0.17	72.46	1.303	1	1	6
51	4.35	74.58	1.271	2	0	5
52	0.41	79.92	1.199	1	0	9
53	1.48	80.13	1.197	2	0	6
54	0.15	81.84	1.176	0	0	10
55	0.62	84.80	1.142	2	1	0
56	2.01	85.29	1.137	2	1	1
57	10.62	86.50	1.124	1	1	8
58	1.69	86.57	1.124	2	0	7
59	1.10	86.77	1.121	2	1	2
60	6.51	89.23	1.097	2	1	3
61	0.19	89.31	1.096	1	0	10

62 Note: Pattern is shown in Figure S4a.

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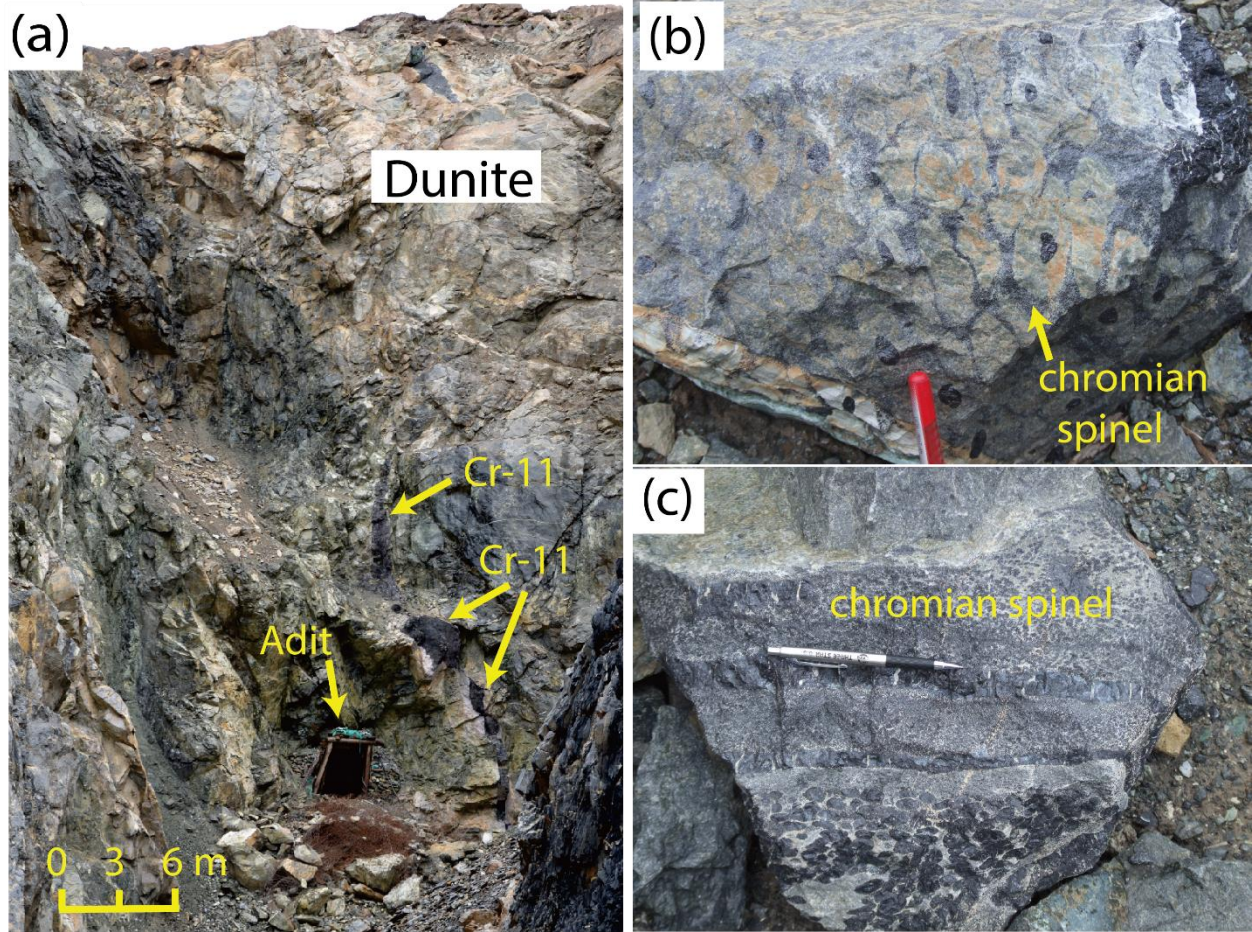
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65 Table S2. X-ray powder diffraction data obtained by simulation for zhiqinite (CuK α_1 radiation)

66	<i>I</i> / <i>rel</i>	2θ (°)	<i>d</i> (Å)	<i>h</i>	<i>k</i>	<i>l</i>
67	8.77	24.02	3.702	1	1	1
68	30.54	30.43	2.935	2	0	2
69	2.72	38.50	2.337	1	1	3
70	100.00	39.76	2.265	3	1	1
71	42.72	42.40	2.130	0	0	4
72	77.64	43.45	2.081	0	2	2
73	8.81	44.03	2.055	2	2	0
74	0.01	44.72	2.025	4	0	0
75	0.00	49.18	1.851	2	2	2
76	38.69	50.36	1.810	3	1	3
77	0.60	58.60	1.574	1	1	5
78	0.53	60.25	1.535	1	3	1
79	5.50	61.36	1.510	5	1	1
80	3.95	62.78	1.479	2	2	4
81	0.02	63.32	1.468	4	0	4
82	0.04	64.11	1.451	4	2	2
83	9.62	67.89	1.379	3	1	5
84	0.31	68.57	1.367	1	3	3
85	8.61	69.42	1.353	3	3	1
86	3.01	69.60	1.350	5	1	3
87	1.18	70.18	1.340	2	0	6
88	4.96	73.53	1.287	6	0	2
89	0.00	76.09	1.250	4	2	4
90	5.04	77.25	1.234	3	3	3
91	5.13	78.30	1.220	0	2	6
92	2.24	80.47	1.192	0	4	0
93	2.91	81.94	1.175	6	2	0
94	0.00	82.50	1.168	2	2	6
95	0.15	82.61	1.167	1	1	7
96	0.14	84.04	1.151	1	3	5
97	1.16	85.01	1.140	5	1	5
98	0.00	85.71	1.133	6	2	2
99	1.08	86.44	1.125	5	3	1
100	0.00	87.41	1.115	7	1	1
101	0.85	88.41	1.105	2	4	2

102 Note: Pattern is shown in Figure S4b.

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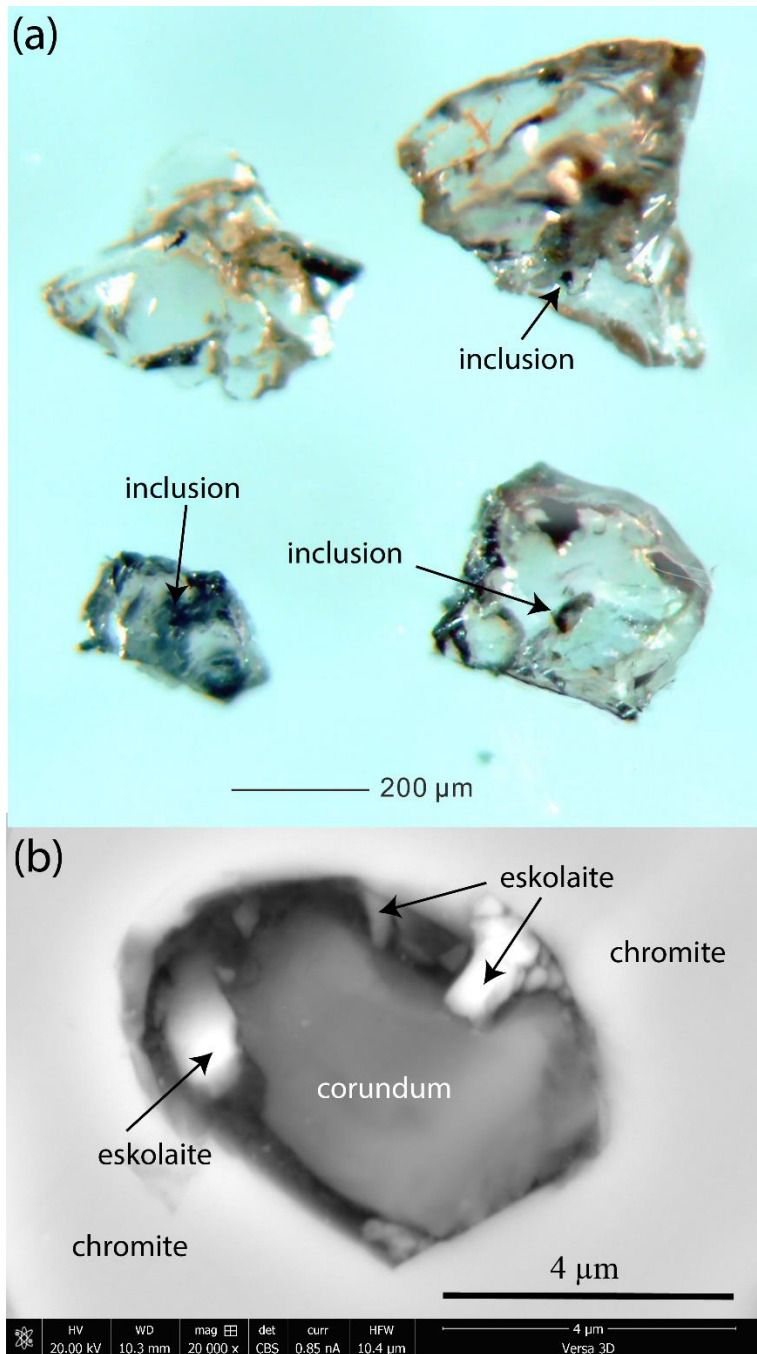
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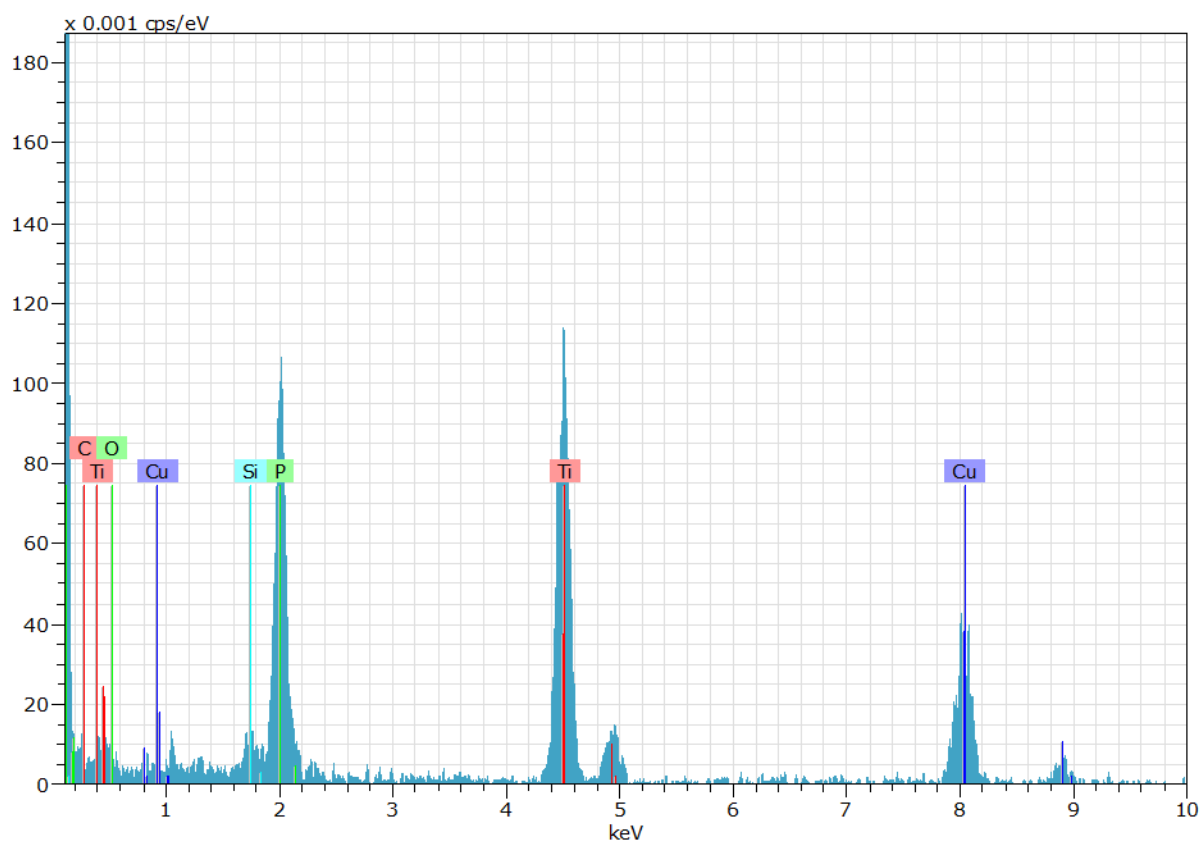
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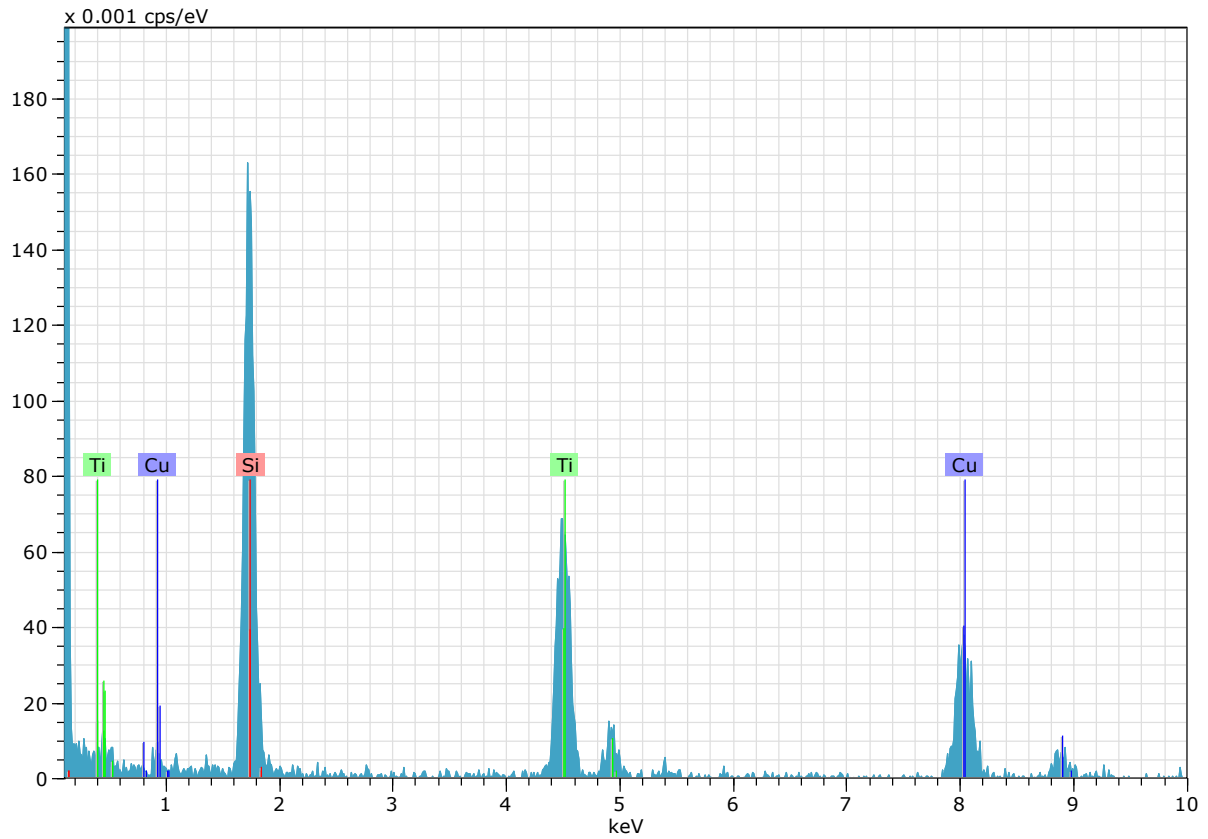


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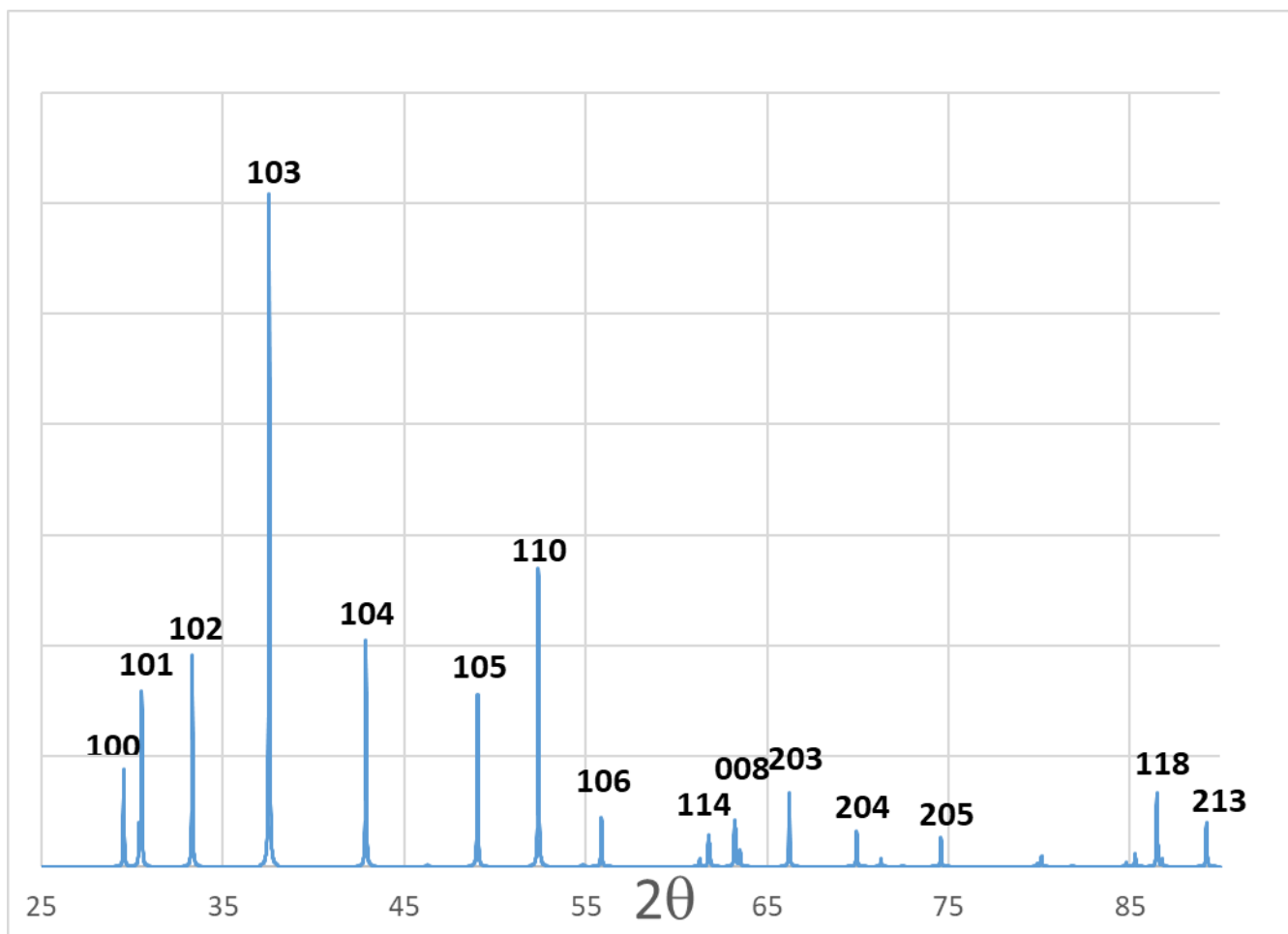
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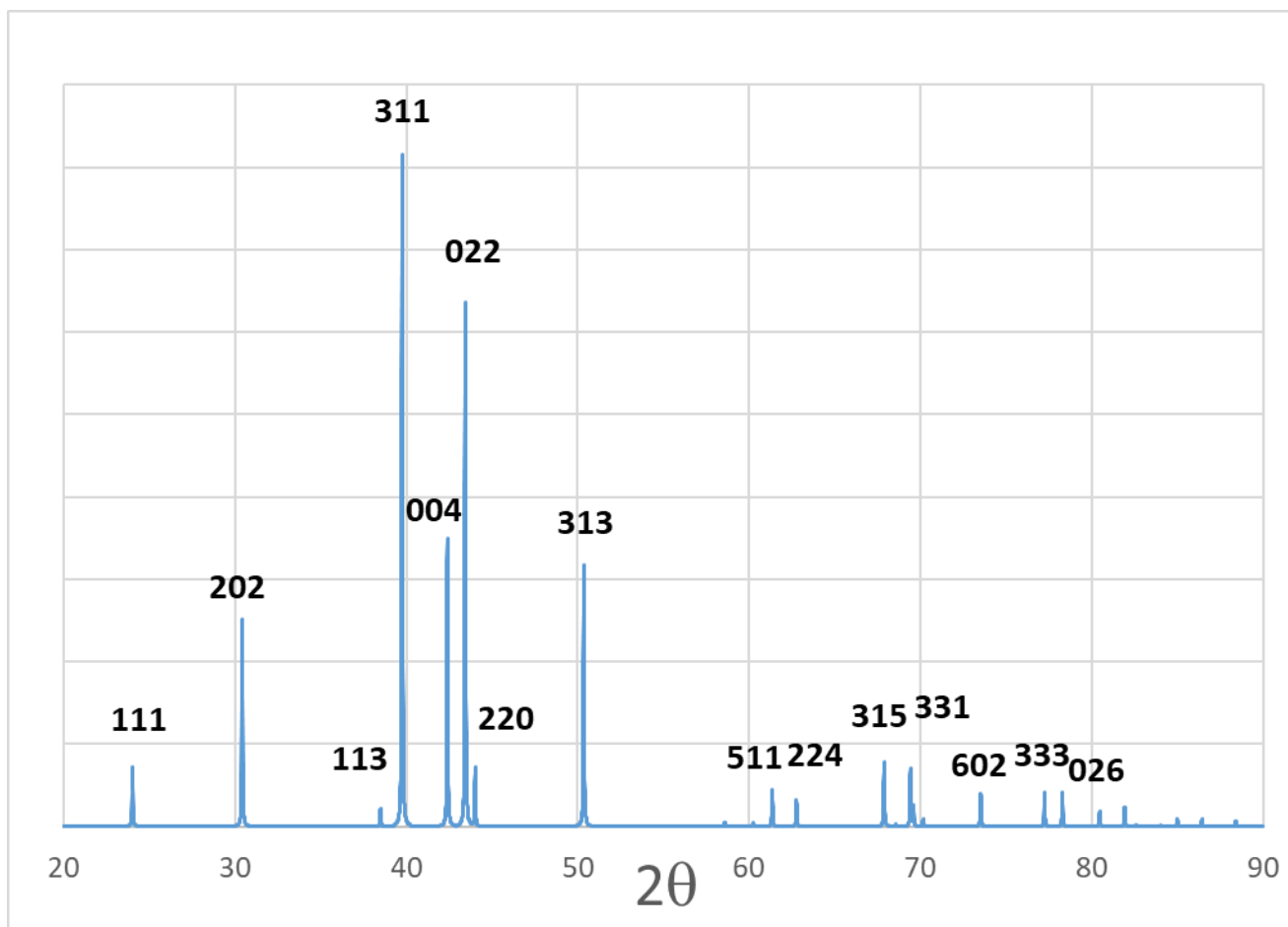
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