

SUPPLEMENT

to manuscript

SYNTHESIS AND HIGH-TEMPERATURE HEAT CAPACITY OF $\text{LaMgAl}_{11}\text{O}_{19}$ and $\text{SmMgAl}_{11}\text{O}_{19}$ HEXAALUMINATES

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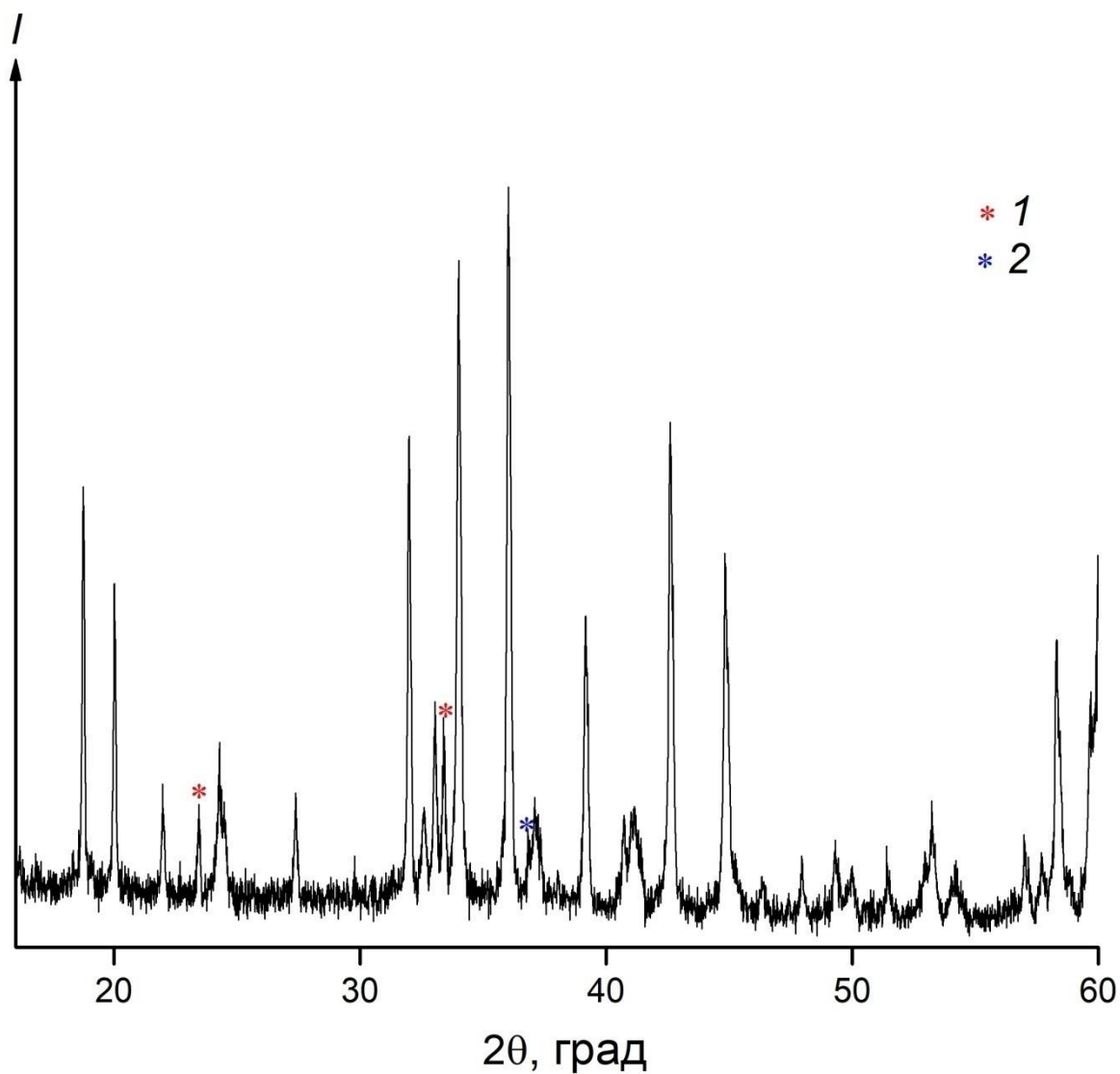


Fig.1a. Diffraction of pattern $\text{LaMgAl}_{11}\text{O}_{19}$ annealed 1500°C ; 1 – LaAlO_3 (Pm-3m), 2 – MgAl_2O_4 (Fd-3m).

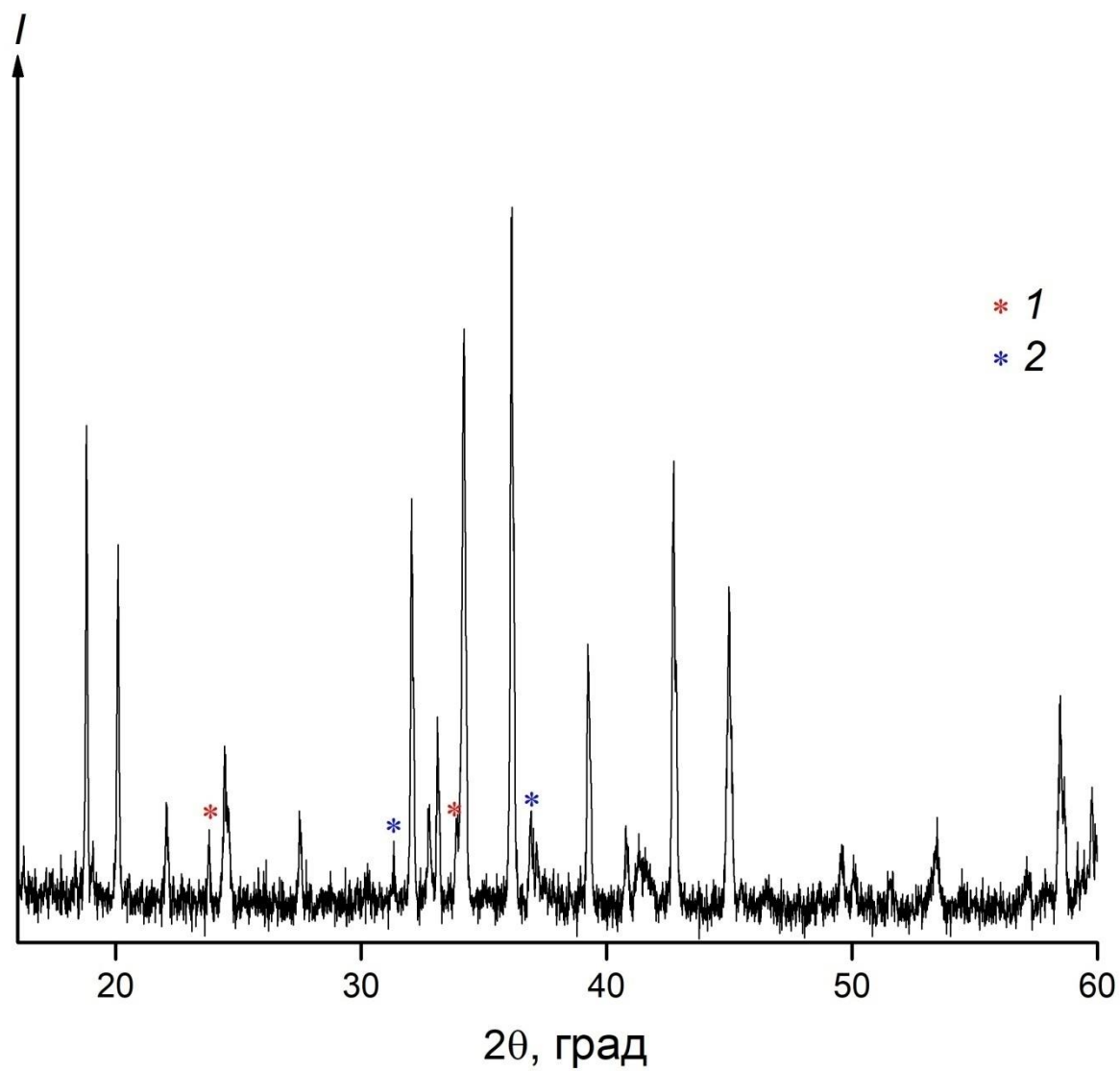


Fig.16. Diffraction of pattern $\text{SmMgAl}_{11}\text{O}_{19}$ annealed 1500°C ; 1 – SmAlO_3 (Pbnm), 2 – MgAl_2O_4 (Fd-3m).

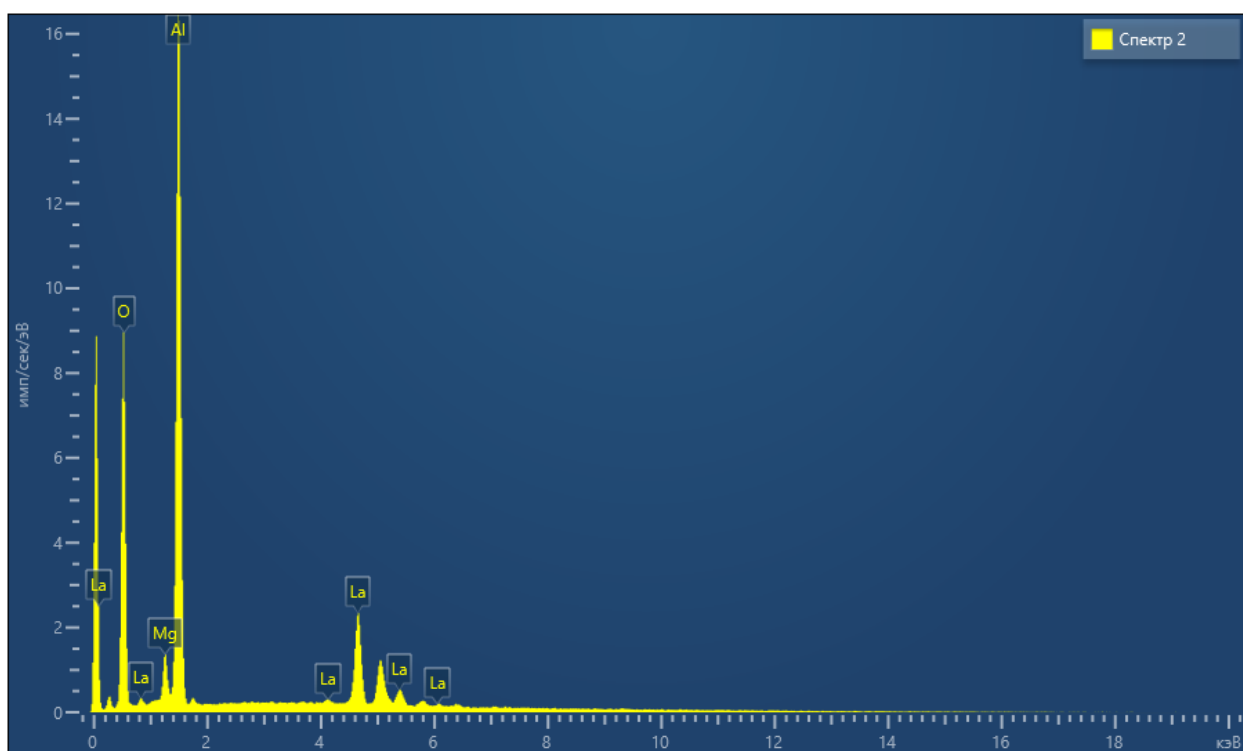


Fig.S2a. EDX of $\text{LaMgAl}_{11}\text{O}_{19}$

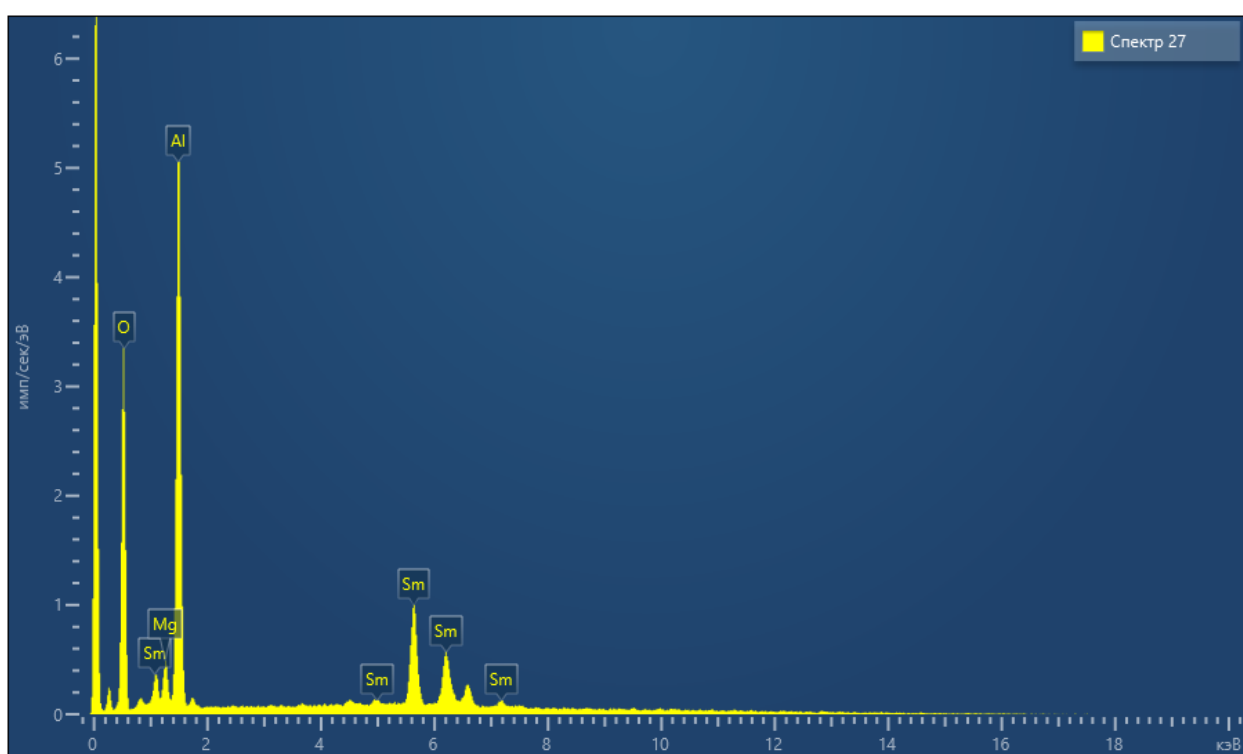


Fig.S26. EDX of $\text{SmMgAl}_{11}\text{O}_{19}$

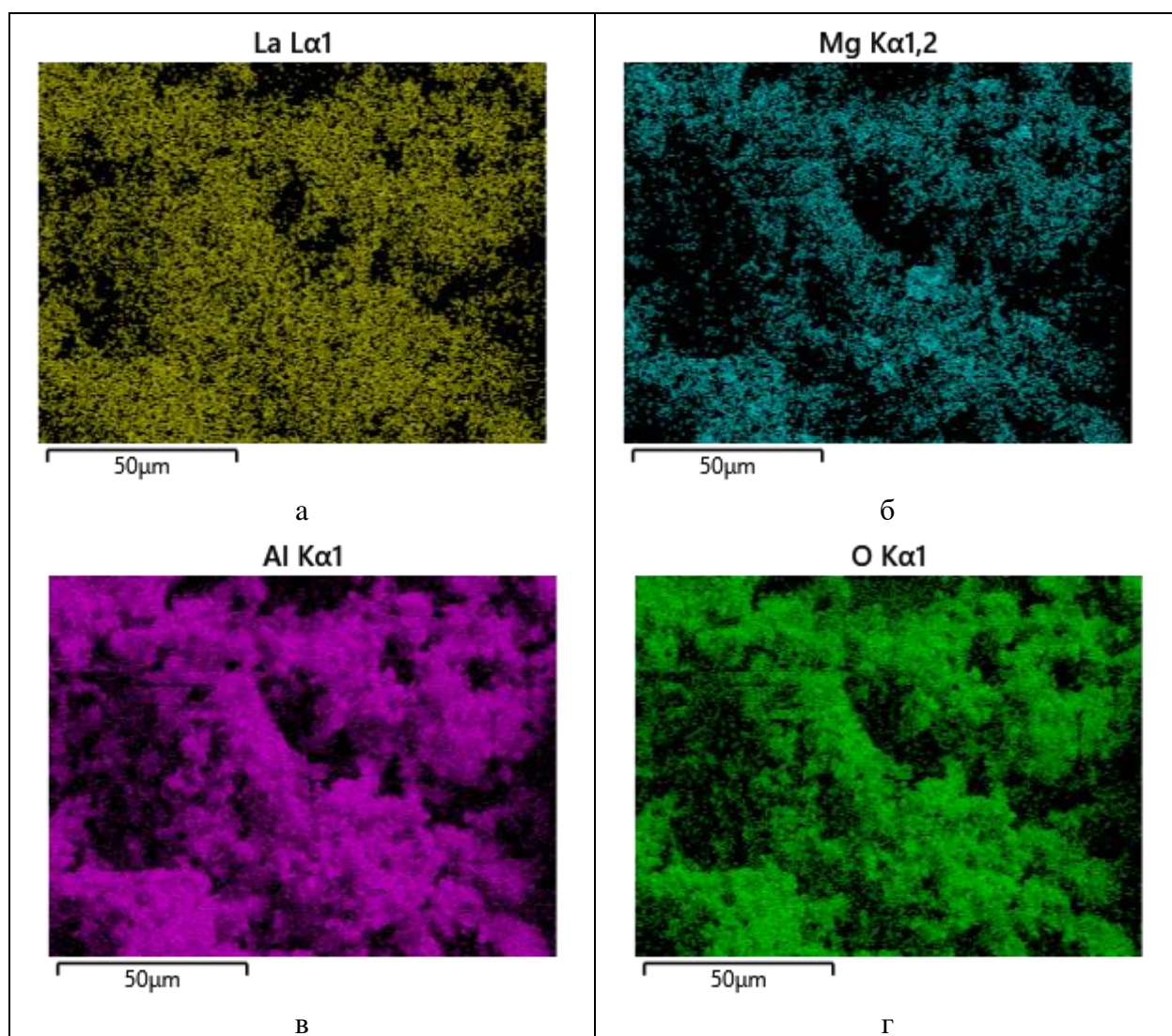
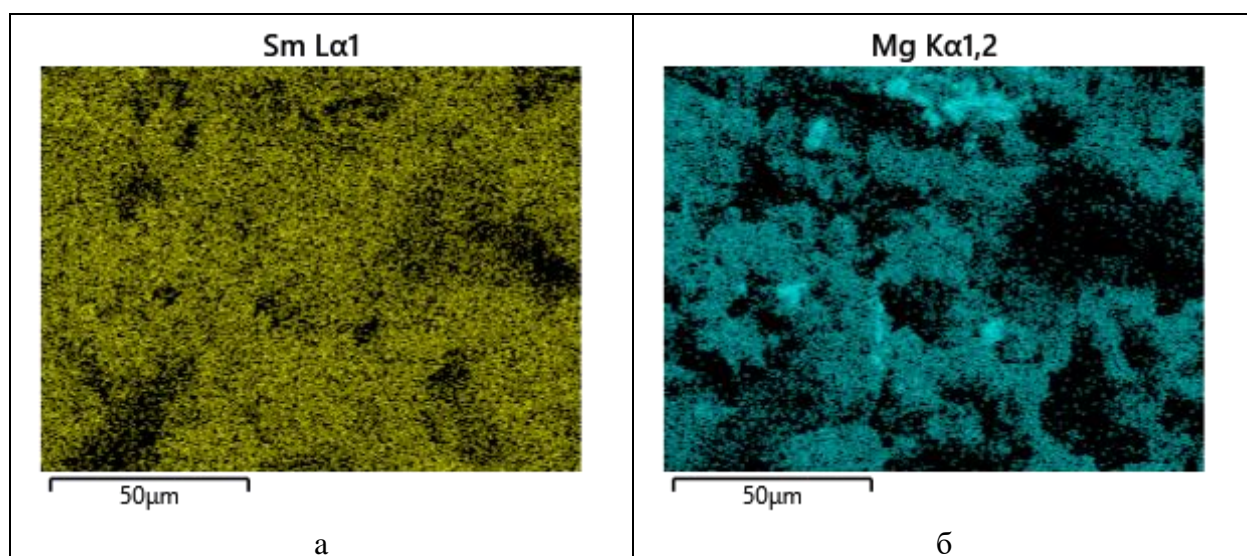


Fig. S3. Sample surface mapping LaMgAl₁₁O₁₉



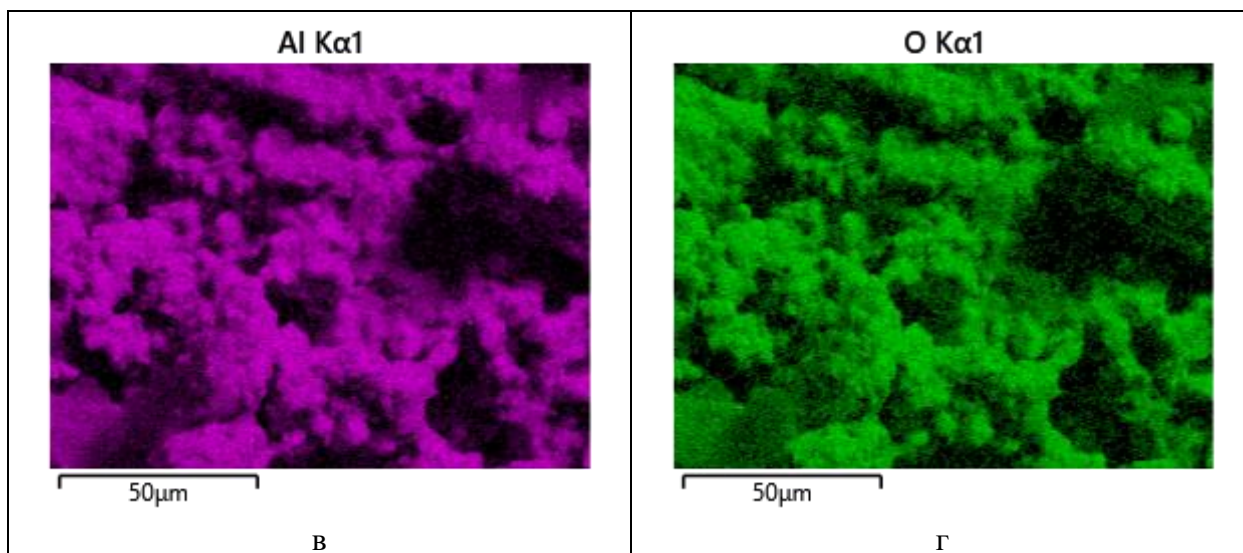


Fig. S4. Sample surface mapping $\text{SmMgAl}_{11}\text{O}_{19}$.

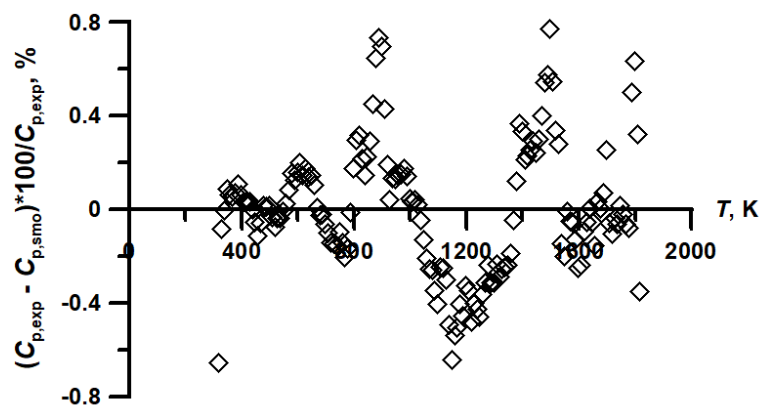


Fig.S5a. Scatter of experimental points of the measured heat capacity $\text{LaMgAl}_{11}\text{O}_{19}$

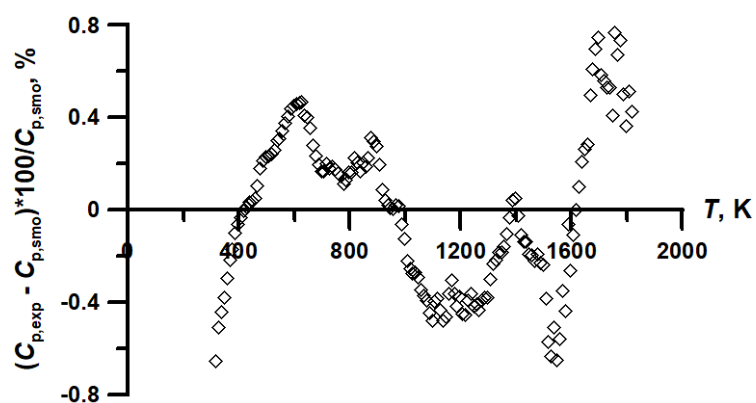


Fig.S5b. Scatter of experimental points of the measured heat capacity $\text{SmMgAl}_{11}\text{O}_{19}$.

Tables.

Table S1. Experimental heat capacity of LaMgAl₁₁O₁₉

<i>T</i> , K	<i>C_p</i> , J/mol K	<i>T</i> , K	<i>C_p</i> , J/mol K	<i>T</i> , K	<i>C_p</i> , J/mol K
317	548,996	827	777,895	1337	838,732
327	565,608	837	778,975	1347	839,886
337	578,418	847	781,181	1357	841,363
347	590,326	857	783,278	1367	843,624
357	600,686	867	786,084	1377	846,105
367	610,393	877	789,169	1387	849,242
377	619,54	887	791,356	1397	849,993
387	628,202	897	792,549	1407	850,031
397	635,755	907	791,921	1417	851,217
407	642,931	917	791,514	1427	852,461
417	649,819	927	791,754	1437	853,845
427	656,304	937	793,901	1447	854,433
437	662,17	947	795,274	1457	855,983
447	667,563	957	796,762	1467	857,881
457	672,614	967	798,191	1477	860,13
467	678,123	977	799,73	1487	861,423
477	683,517	987	800,804	1497	864,161
487	688,108	997	801,367	1507	863,245
497	692,56	1007	802,578	1517	862,472
507	696,431	1017	803,942	1527	862,982
517	700,157	1027	805,082	1537	860,336
527	704,271	1037	805,818	1547	860,853
537	707,934	1047	806,411	1557	863,52
547	711,672	1057	807	1567	864,185
557	715,299	1067	807,886	1577	865,131
567	718,961	1077	809,078	1587	865,488
577	722,63	1087	809,592	1597	865,425
587	725,446	1097	810,333	1607	866,527
597	728,593	1107	812,82	1617	868,778

607	731,723	1117	814,005	1627	870,129
617	734,05	1127	814,769	1637	871,635
627	736,921	1137	814,376	1647	872,112
637	739,194	1147	814,32	1657	872,212
647	741,747	1157	816,326	1667	874,859
657	743,852	1167	817,766	1677	875,591
667	745,468	1177	819,761	1687	877,156
677	747,498	1187	820,46	1697	879,761
687	749,762	1197	822,689	1707	877,983
697	751,603	1207	823,631	1717	878,552
707	753,412	1217	823,658	1727	880,125
717	755,171	1227	825,433	1737	880,871
727	757,134	1237	826,349	1747	882,553
737	759,045	1247	827,174	1757	883,203
747	761,412	1257	829,083	1767	883,809
757	762,921	1267	830,608	1777	884,622
767	764,282	1277	832,327	1787	890,715
777	766,386	1287	832,802	1797	892,885
787	769,341	1297	833,88	1807	891,093
797	772,535	1307	835,638	1817	886,088
807	775,171	1317	836,26		
817	777,017	1327	837,599		

Table S2. Experimental heat capacity of SmMgAl₁₁O₁₉

<i>T</i> , K	<i>C_p</i> , J/mol K	<i>T</i> , K	<i>C_p</i> , J/mol K	<i>T</i> , K	<i>C_p</i> , J/mol K
317	549,137	827	785,371	1337	846,842
327	563,893	837	786,722	1347	847,892
337	577,076	847	788,61	1357	849,16
347	589,246	857	790,082	1367	850,69
357	600,635	867	791,931	1377	852,311
367	611,235	877	794,172	1387	854,01

377	620,906	887	795,586	1397	855,143
387	630,075	897	796,922	1407	855,53
397	638,483	907	797,764	1417	855,848
407	646,288	917	798,359	1427	856,603
417	653,64	927	799,418	1437	857,646
427	660,467	937	800,667	1447	858,204
437	666,915	947	801,973	1457	859,202
447	672,92	957	803,338	1467	859,997
457	678,618	967	804,852	1477	861,249
467	684,319	977	806,176	1487	861,949
477	689,906	987	806,859	1497	862,873
487	694,953	997	807,678	1507	862,623
497	699,616	1007	808,22	1517	862,005
507	704,028	1017	809,246	1527	862,436
517	708,236	1027	810,377	1537	864,549
527	712,326	1037	811,672	1547	864,296
537	716,424	1047	812,771	1557	866,1
547	720,132	1057	813,583	1567	868,907
557	723,875	1067	814,626	1577	869,099
567	727,468	1077	815,662	1587	873,375
577	730,921	1087	816,469	1597	872,634
587	734,288	1097	817,379	1607	874,941
597	737,379	1107	819,269	1617	876,89
607	740,356	1117	820,58	1627	878,765
617	743,173	1127	821,348	1637	880,675
627	745,916	1137	822,129	1647	882,158
637	748,129	1147	823,455	1657	883,299
647	750,59	1157	825,457	1667	886,156
657	752,724	1167	827,074	1677	888,136
667	754,557	1177	827,742	1687	889,871
677	756,532	1187	828,417	1697	891,298

687	758,522	1197	829,924	1707	890,843
697	760,524	1207	830,406	1717	891,599
707	762,665	1217	831,503	1727	892,294
717	765,016	1227	833,129	1737	893,278
727	766,909	1237	834,477	1747	893,171
737	768,959	1247	835,128	1757	897,317
747	770,827	1257	836,306	1767	897,438
757	772,627	1267	837,209	1777	898,954
767	774,402	1277	838,627	1787	897,828
777	775,963	1287	839,812	1797	897,544
787	777,906	1297	840,913	1807	899,846
797	779,939	1307	842,655	1817	900,047
807	781,655	1317	844,274		
817	783,836	1327	845,499		