Supplementary materials to the article

To the homogeneity range of tris(8-hydroxyquinoline)gallium

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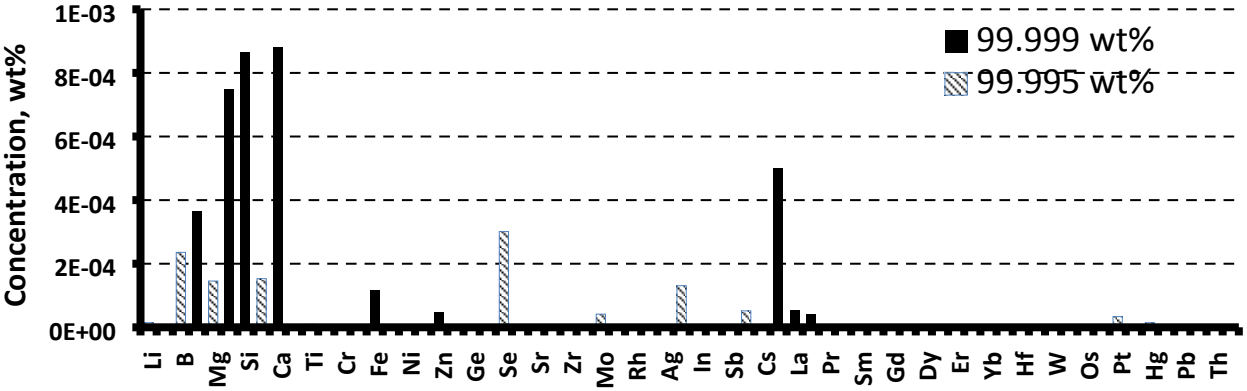


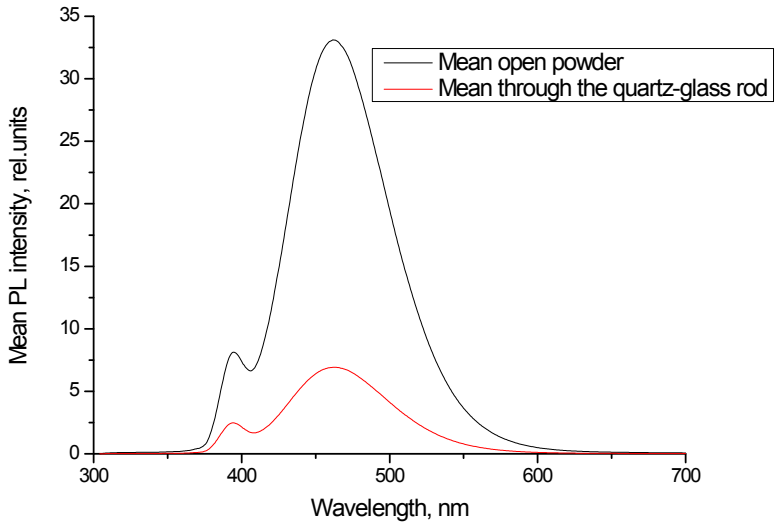
Fig. S1 Impurity concentrations in Gaq_3 powder preparation after conducting of the annealing experiments with (▨) and without (■) detection limits.

Table S1. ICP-MS measurements of impurity concentration in Gaq_3 powder preparations after sublimation

Impurity element	Isopropanol	n-hexan	8-Hq	$Ga(NO_3)_3 \times 8H_2O$	Gaq_3
	wt%	wt%	wt%	wt%	wt%
Li	6.15E-04	2.64E-04			1.45E-05
Be					3.33E-06
B					2.36E-04
Na				2.81E-04	
Mg			6.55E-04	2.53E-04	1.46E-04
Al		8.93E-05	1.29E-03	8.24E-04	
Si	1.69E-03				
K	1.82E-03	6.55E-04		6.13E-04	1.53E-04
Ca		1.29E-03			
Sc					1.09E-06
Ti					9.47E-06
V				8.76E-06	6.57E-06
Cr			2.05E-05		4.48E-06
Mn				2.26E-05	
Fe				1.82E-04	
Co			5.17E-04	4.49E-06	4.77E-06
Ni			7.10E-04		8.40E-06
Cu				2.99E-03	
Zn					
Ga		2.05E-05		matrix	
Ge					7.61E-07
As				2.95E-05	6.89E-06
Se		5.17E-04		0.00E+00	3.01E-04

Impurity element	Isopropanol	n-hexan	8-Hq	$Ga(NO_3)_3 \times 8H_2O$	Gaq_3
	wt%	wt%	wt%	wt%	wt%
Br	2.37E-03	7.10E-04		3.40E-03	
Rb				1.47E-04	4.93E-06
Sr	2.47E-05				5.93E-06
Y	1.99E-06		6.09E-06	2.38E-04	
Zr					
Nb					1.43E-06
Mo					4.15E-05
Ru					1.09E-06
Rh				1.63E-06	3.33E-07
Pd			1.55E-05		1.84E-06
Ag	1.31E-06	6.09E-06			
Cd			1.11E-06		1.31E-04
In			1.79E-04	1.38E-05	1.16E-06
Sn					
Sb					5.55E-06
Te			2.85E-07		5.17E-05
I	6.03E-04	1.55E-05			
Cs	0.00E+00	1.11E-06		4.65E-06	
Ba	2.95E-04	1.79E-04		3.71E-03	
La				2.91E-04	
Ce	4.28E-07			1.32E-04	
Pr		2.85E-07			1.75E-07
Nd					
Sm					
Eu					9.51E-08
Gd				1.04E-05	3.05E-07
Tb				8.68E-06	9.51E-08
Dy					
Ho				1.46E-03	
Er					
Tm					1.90E-07
Yb					
Lu				1.36E-06	
Hf					9.51E-08
Ta			1.11E-04	4.42E-06	9.51E-08
W					2.61E-06
Re					9.51E-08
Os					9.51E-08
Ir					2.85E-07
Pt					3.37E-05
Au					
Hg	4.68E-05	1.11E-04			1.45E-05
Tl					1.43E-07
Pb				7.72E-04	
Bi	7.13E-07				9.35E-07
Th				4.05E-07	9.51E-08

Impurity element	Isopropanol	n-hexan	8-Hq	$Ga(NO_3)_3 \times 8H_2O$	Gaq_3
	wt%	wt%	wt%	wt%	wt%
U					4.75E-08
Total	7.47E-03	3.86E-03	3.51E-03	1.54E-02	1.20E-03
Gross	99.9925	99.9961	99.9965	99.9846	99.9988



λ_{PL}^{max} (ZnS:Sn $_{\text{open powder}}$) = λ_{PL}^{max} (ZnS :Sn $_{\text{SiO2 rod}}$) = 461,6 ± 0,4 nm

FWHM (ZnS:Sn $_{\text{open powder}}$) = FWHM (ZnS:Sn$_{\text{SiO2 rod}}$) = 79 ± 0,4 nm

PL intensity at λ_{PL}^{max}

I_{PL}^{max} (ZnS :Sn o.к.) / I_{PL}^{max} (ZnS :Sn SiO2) ≈6

Fig.S2 Photoluminescence spectra of ZnS:Sn phosphor measured through the quartz glass road and from the open surface of the powder preparation at RT.

Table S2 Parameters of $S_{i\text{-}Gaq_3}LV$ equilibrium determined from the PL measurements (see Fig.5)

N	$T_{8\text{-}Hq}$, K	$lgP_{8\text{-}Hq}$, [Pa]	T_{Gaq_3}, K	1000/T, K^{-1}	FWHM, nm	Center, nm	Height	Centroid, nm
1	354	2.18	408	2.450980	110.7385	526.62	0.18371	553.6422
2	363	2.38	415	2.409639	119.3143	527.40	0.01504	554.2691
3	369	2.52	424	2.358491	132.7038	537.54	0.02914	554.1551
4	372	2.58	432	2.314815	130.9698	542.21	0.01364	560.0141
5	403	3.20	465	2.150538	116.2090	531.30	0.21304	555.9117
6	425	3.58	507	1.972387	114.2345	530.21	0.01815	556.9244
7	448	3.93	534	1.872659	117.3522	527.40	0.02856	552.1287
8	440	3.81	553	1.808318	113.8478	528.96	0.54011	556.7780
9	453	4.01	604	1.655629	97.51131	522.71	0.03163	546.2723
10	446	3.90	633	1.579779	96.02259	523.49	0.50537	546.1322
11	393	3.00	665	1.503795	98.22154	524.52	0.25305	545.0512