Formation of the ST12 phase in nanocrystalline Ge at ambient pressure: Supporting Information

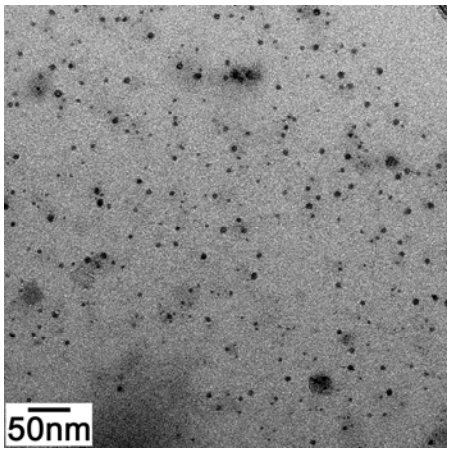

Figure S1. Brightfield TEM image of Ge nanocrystals formed from supernatant of TB-Ge after annealing at 500 °C is the evidence of thermolysis.

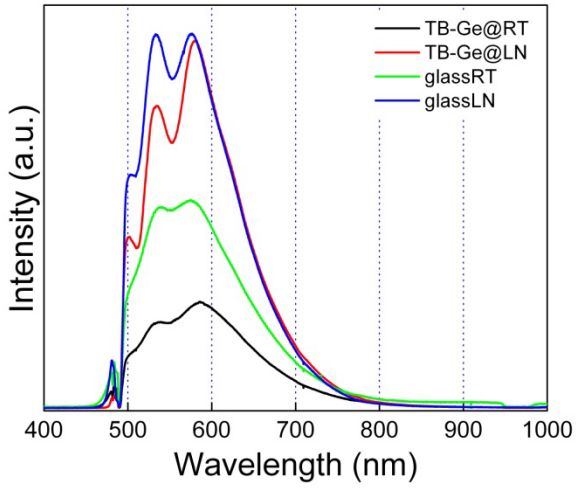

Figure S2. Photoluminescence (PL) of materials collected from supernatant of TB-Ge, after annealing at 500 °C for 2 h under Ar atmosphere. PL was measured at 298 K (RT) and at 77 K (LN). Background PL produced by glass substrate is included for comparison.

Table S1. Summary of 2θ values and relative intensities of XRD peaks collected from NB-Ge and TB-Ge samples, compared with JCPDS data for ST12-Ge, diamond cubic (Ge-I), and NaCl.

ST12-Ge[a]			**Ge-I**[b]			**NaCl**[c]			**NB-Ge**[d]		**NB-Ge**[e]		**TB-Ge**[e,f]	
hkl	2θ	Int.	*hkl*	2θ	Int.	*hkl*	2θ	Int.	2θ	Int.	2θ	Int.	2θ	Int.
102	29.7	41	111	27.3	100						27.5	20		
201	32.8	100				200	32.8	100	31.6	100	31.8	100	31.8	100
112	33.4	26												
			220	45.3	57	220	47.1	54			45.5	37	45.5	57
222	50.8	35	311	53.7	39	311	55.9	2			56.5	13		
						222	58.6	15						
			400	66.0	7									

[a] JCPDS No. 72-1089. [b] JCPDS No. 04-0545. [c] JCPDS No. 83-1728. [d] Collected from supernatant. [e] Collected from sediment. [f] No measurable signals were obtained from supernatant of TB-Ge.