Dynamic Visualization of Photothermal Properties of Gold Nanocages Assemblies Using Thermoresponsive Elastin like Poly-Peptides

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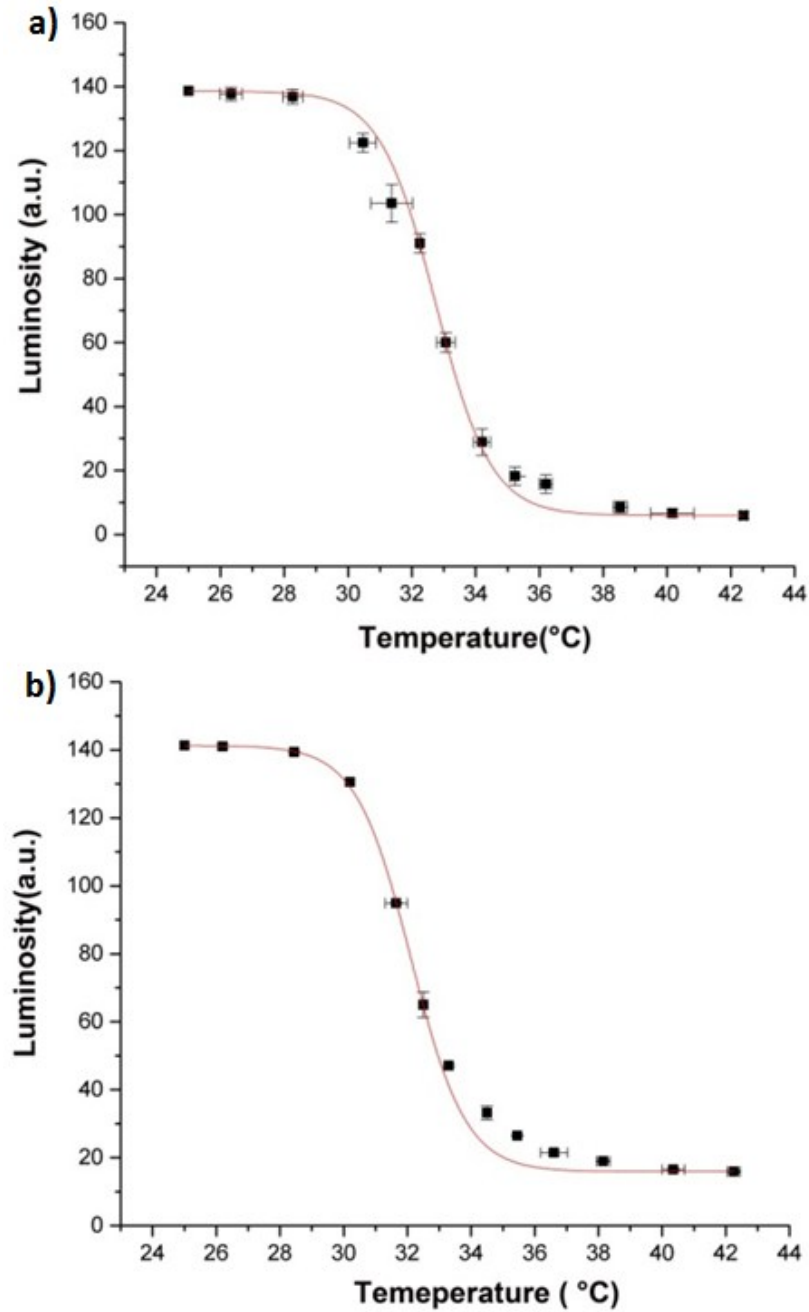
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SUPPLEMENTARY INFORMATION

Figure S1. The calibration curves a) and b) for two different thicknesses of ELP solutions (~ 330 μm and 550 μm). The T_t and dT used in the paper were extracted from these plots. It can be noticed that even though the minimum luminosities L_2 for these plots are different, T_t is very close, since it is a function of ELP concentration that stays constant in all the experiment.

Table S1. T_t and dT for individual thickness calibrations obtained from the Figure S1. Average T_t 32.43 and dT 0.87 were calculated using data from the table.

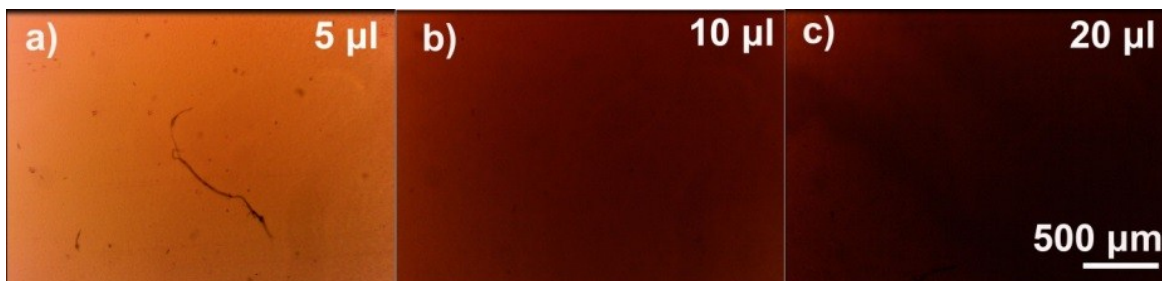|	L1	L2	Tt	dT
Thickness1	138.59	5.9	32.74	0.87
Thickness2	141.3	15.89	32.11	0.86
Average			32.425	0.866
Standard Deviation			0.445	0.005

Figure S2. Three drops of ELPs solution with volumes 5μl, 10μl and 20μl formed layers of increasing thickness. An experiment demonstrating that the highest absorption (minimum luminosity $L_{2)}$ is a function of thickness of ELPs solution. However, the T_t and dT do not depend on the thickness layer, but only are a function of concentration of ELPs.
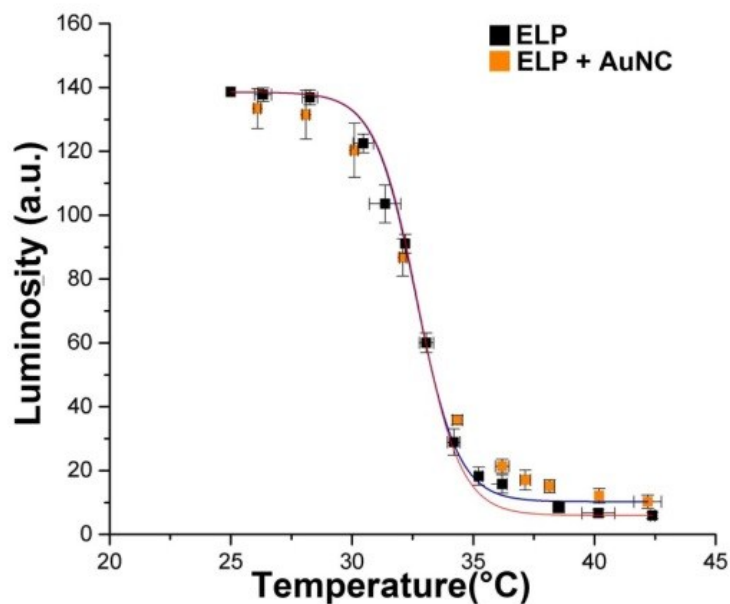

Figure S3. The transfer functions for ELPs solution and solution of ELP with added AuNC demonstrate that the ELPs properties are not influenced by the AuNC used in this study.

Table S2. The luminosity L_1 at 25 ℃ and L_2 at 42 ℃ for Figure 3. The rest of luminosity values at different temperatures were estimated using Equation (1) and plotted in Figure S4.

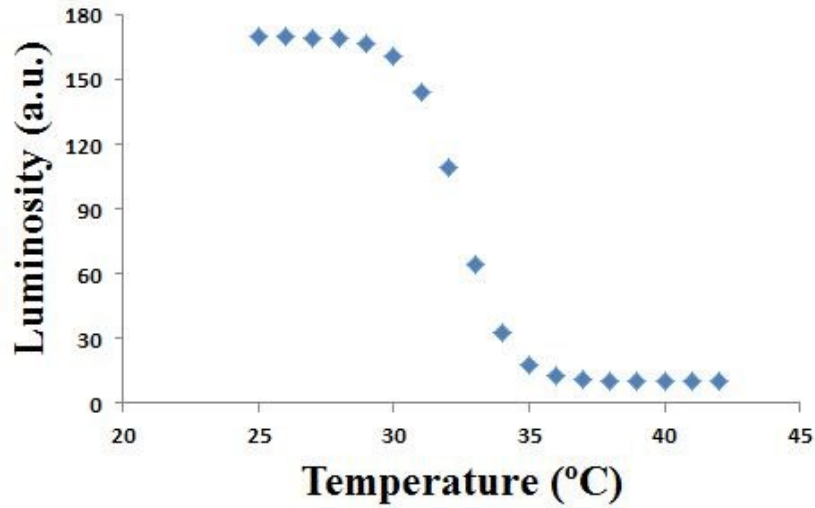| Figure 3			
Temperature (℃)		Luminosity (a.u.)	
Maximum	42	10.00	(L₂)Mininimum
	41	10.01	
	40	10.03	
	39	10.08	
	38	10.26	
	37	10.83	
	36	12.60	
	35	17.93	
	34	32.61	
	33	64.69	
	32	109.38	
	31	144.09	
	30	160.77	
	29	166.96	
	28	169.02	
	27	169.69	
	26	169.90	
Mininimum	25	170.00	(L₁) Maximum

Figure S4. The luminosity-temperature transfer function for experiment in Figure 3 corresponding to the data from Table S2.

Table S3. The luminosity data L_1 at 25 ºC and L_2 at 42 ºC for Figure 4. The rest of luminosity values at different temperatures were estimated using Equation (1) and plotted in Figure S5.

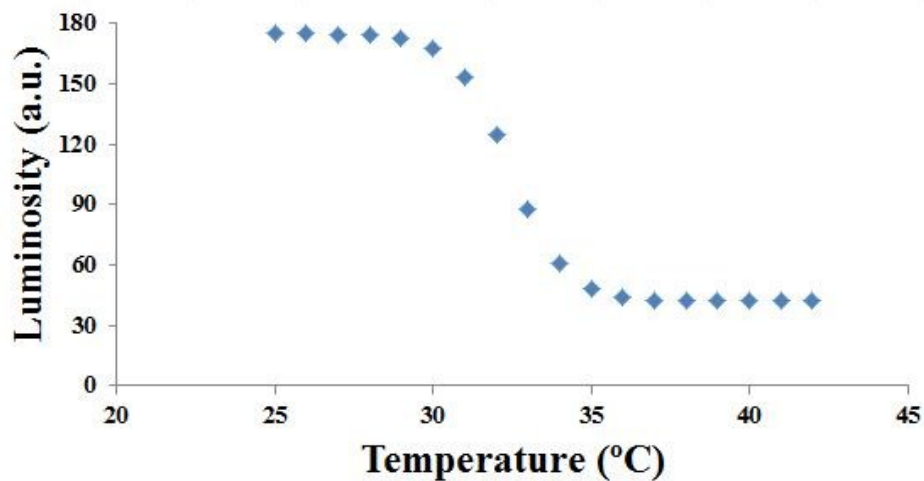| Figure 4			
Temperature (ºC)		**Luminosity (a.u.)**	
Maximum	**42**	**42.0**	**(L₂)Mininimum**
	41	42.01	
	40	42.02	
	39	42.07	
	38	42.22	
	37	42.69	
	36	44.16	
	35	48.59	
	34	60.79	
	33	87.46	
	32	124.61	
	31	153.46	
	30	167.33	
	29	172.47	
	28	174.19	
	27	174.74	
	26	174.92	
Mininimum	**25**	**175.00**	**(L₁) Maximum**

Figure S5. The luminosity-temperature transfer function for the experiment shown in Figure 4 corresponding to the data from Table S3.

Table S4. The luminosity L_1 at 25 ºC and L_2 at 42 ºC for Figure 5. The rest of luminosity values at different temperatures were estimated using Equation (1) and plotted in Figure S6.

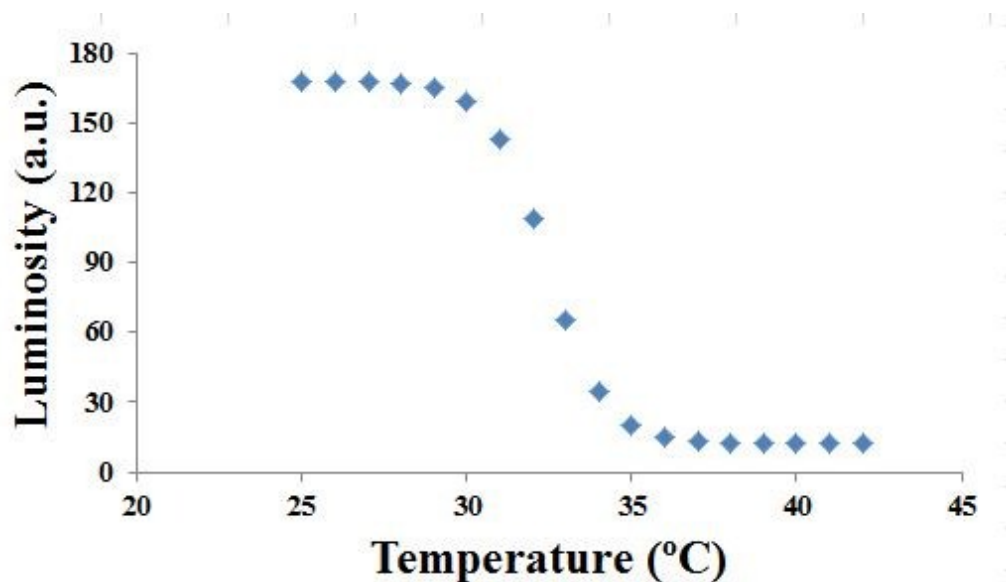| Figure 5			
Temperature (ºC)		Luminosity	
Maximum	42	12.50	(L2)Mininimum
	41	12.51	
	40	12.53	
	39	12.58	
	38	12.76	
	37	13.31	
	36	15.04	
	35	20.24	
	34	34.57	
	33	65.88	
	32	109.50	
	31	143.38	
	30	159.66	
	29	165.70	
	28	167.72	
	27	168.37	
	26	168.57	
Mininimum	25	168.67	(L1) Maximum

Figure S6. The luminosity-temperature transfer function for experiment in Figure 5 corresponding to the data from Table S4.

Table S5. The luminosity data L_1 at 25 ºC and L_2 at 42 ºC for Figure 7(I). The rest of luminosity values at different temperatures were estimated using Equation (1) and plotted in Figure S7.

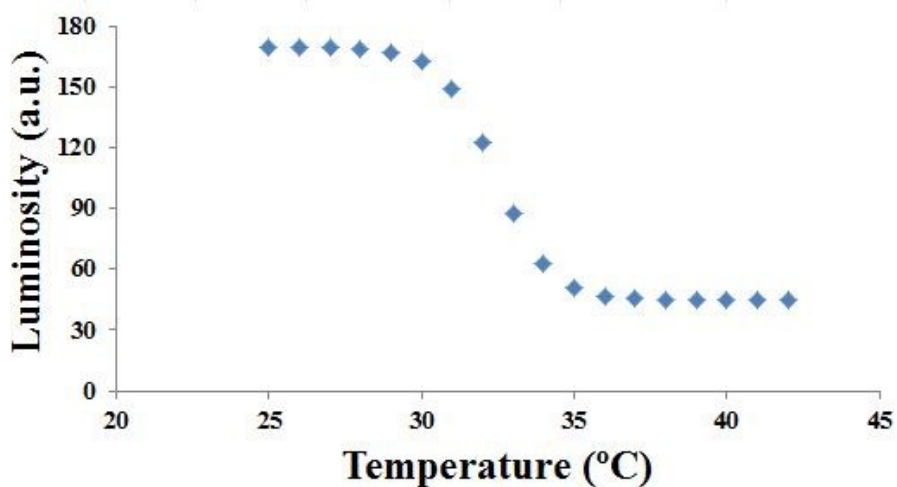| Figure 7 (I)			
Temperature (ºC)		Luminosity	
Maximum	42	45.00	(L₂)Mininimum
	41	45.01	
	40	45.02	
	39	45.07	
	38	45.21	
	37	45.65	
	36	47.03	
	35	51.19	
	34	62.65	
	33	87.71	
	32	122.60	
	31	149.70	
	30	162.73	
	29	167.56	
	28	169.18	
	27	169.70	
	26	169.86	
Mininimum	25	169.94	(L₁) Maximum

Figure S7. The luminosity-temperature transfer function for experiment in Figure 7(I) corresponding to the data from Table S5.

Table S6. The luminosity data L_1 at 25 ºC and L_2 at 42 ºC for Figure 7(II). The other luminosity values at different temperatures were estimated using Equation (1) and plotted in Figure S8.

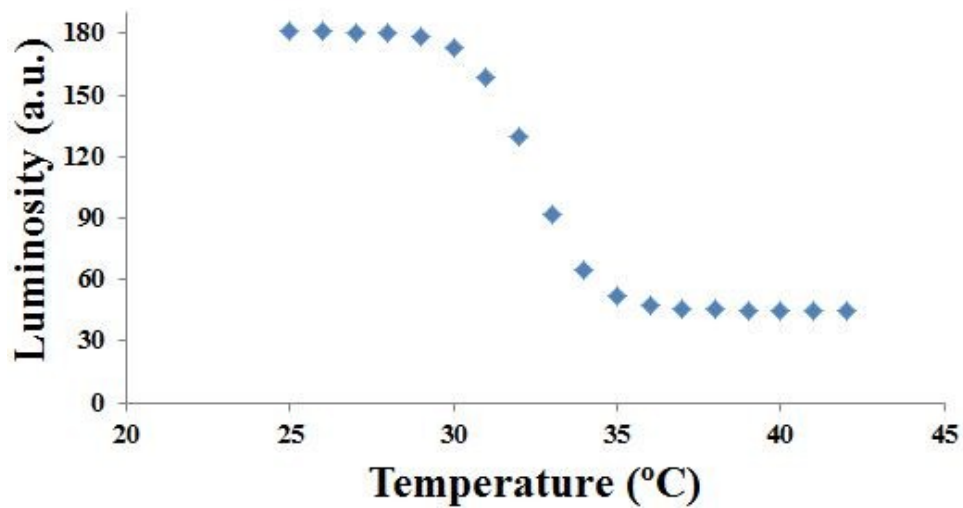| Figure 7 (II)			
Temperature (ºC)		Luminosity	
Maximum	42	45.00	(L₂)Mininimum
	41	45.01	
	40	45.02	
	39	45.07	
	38	45.23	
	37	45.71	
	36	47.21	
	35	51.74	
	34	64.21	
	33	91.48	
	32	129.46	
	31	158.96	
	30	173.13	
	29	178.39	
	28	180.15	
	27	180.72	
	26	180.90	
Mininimum	25	180.98	(L₁) Maximum

Figure S8. The luminosity-temperature transfer function for experiment in Figure 7(II) corresponding to the data from Table S6.

Table S7. The luminosity data L_1 at 25 ºC and L_2 at 42 ºC for Figure 7(III). The rest of luminosity values at different temperatures were estimated using Equation (1) and plotted in Figure S9.

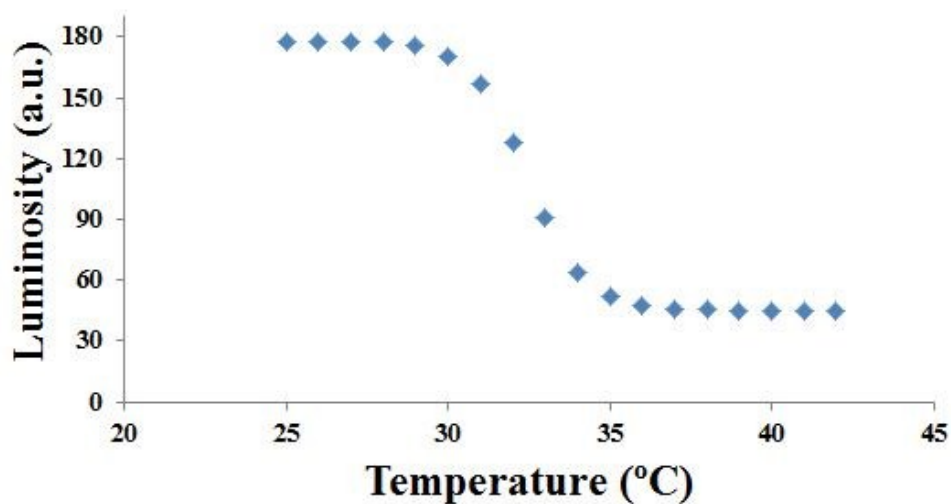| Figure 7 (III)			
Temperature (ºC)		Luminosity	
Maximum	42	45.00	(L2)Mininimum
	41	45.01	
	40	45.02	
	39	45.07	
	38	45.22	
	37	45.69	
	36	47.16	
	35	51.59	
	34	63.79	
	33	90.46	
	32	127.61	
	31	156.46	
	30	170.33	
	29	175.47	
	28	177.19	
	27	177.74	
	26	177.92	
Mininimum	25	178.00	(L1) Maximum

Figure S9. The luminosity-temperature transfer function for experiment in Figure 7(III) corresponding to the data from Table S7