

## Figures

**Figure S1.** Evolution of CL emission for Ov-POSS powder at 150 °C measured during

nonisothermal determinations.

Heating rate: 10 °C min<sup>-1</sup>.

**Figure S2.** Isothermal CL spectra recorded on two different EPDM hybrids

(1) EPDM/Ov-POSS 1; (2) EPDM/Ov-POSS 5

Temperature 170 °C; dose 0 kGy.

**Figure S3.** Nonisothermal CL records on different EPDM hybrids

(1) EPDM neat; (2) EPDM/Ov-POSS 5; (3) EPDM/*Spirulina platensis*;  
(4) EPDM/*Chlorella vulgaris*; (5) EPDM/Ov-POSS 1.

Dose: 0 kGy. Heating rate: 15 °C min<sup>-1</sup>

**Figure S4.** Nonisothermal CL records on different EPDM hybrids

(1) EPDM neat; (2) EPDM/Ov-POSS 5; (3) EPDM/*Spirulina platensis*;  
(4) EPDM/*Chlorella vulgaris*; (5) EPDM/Ov-POSS 1.

Dose: 0 kGy. Heating rate: 5 °C min<sup>-1</sup>

**Figure S5.** Isothermal CL spectra recorded on unirradiated EPDM hybrid composites

(1) 160 °C, (2) 170 °C, (3) 180 °C.

(a) pristine EPDM; (b) EPDM/POSS 1; (c) EPDM/*Chlorella vulgaris*;  
(d) EPDM/*Spirulina platensis*; (e) EPDM/POSS 5/*Chlorella vulgaris*;  
(f) EPDM/POSS/*Spirulina platensis*; (g) EPDM/POSS 5.

**Figure S6.** Nonisothermal CL spectra ascribed to EPDM modified with algal extract

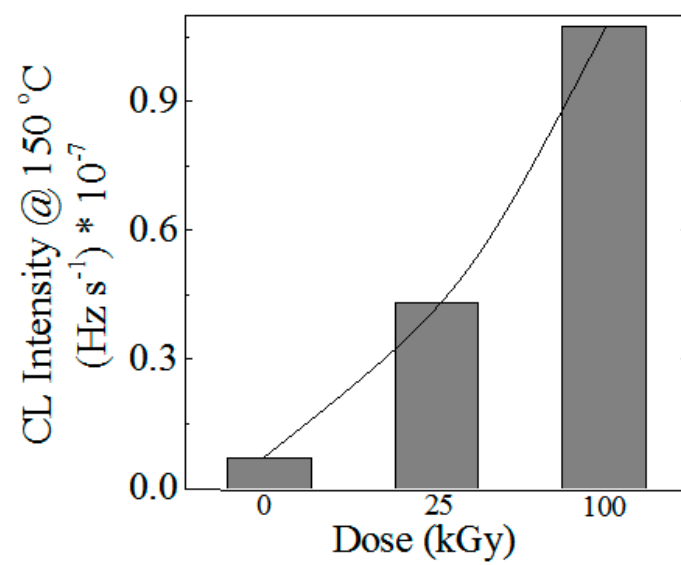
(1) 0 kGy; (2) 25 kGy; (3) 100 kGy

EPDM/POSS 5/*Chlorella vulgaris*: (a) 3.7 °C min<sup>-1</sup>; (b) 5.0 °C min<sup>-1</sup>;

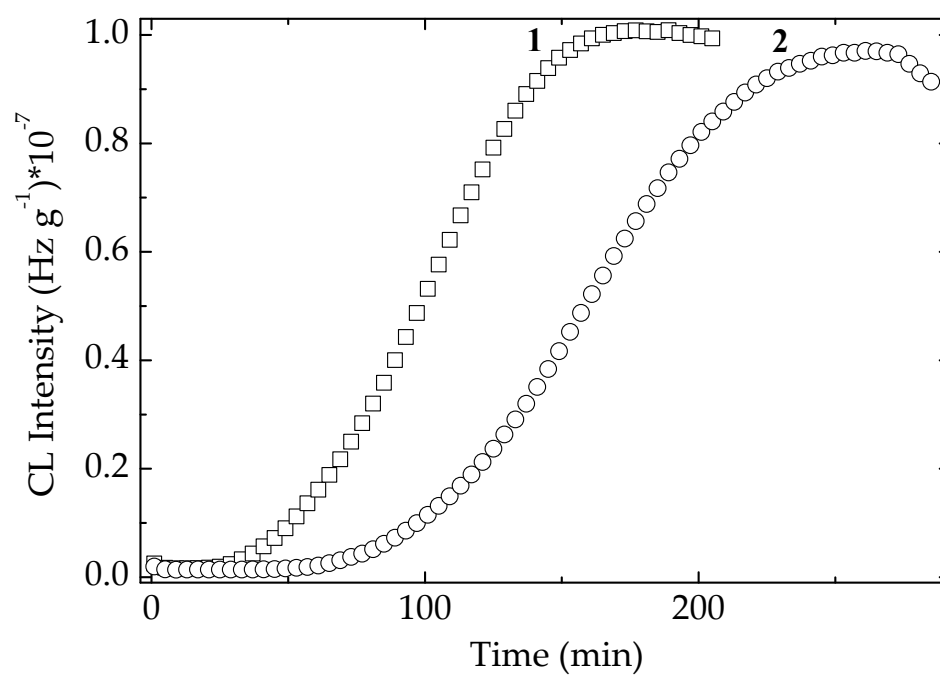
(c) 10.0 °C min<sup>-1</sup>; (d) 15.0 °C min<sup>-1</sup>.

EPDM/POSS 5/ *Spirulina platensis*: (e) 3.7 °C min<sup>-1</sup>; (f) 5.0 °C min<sup>-1</sup>;

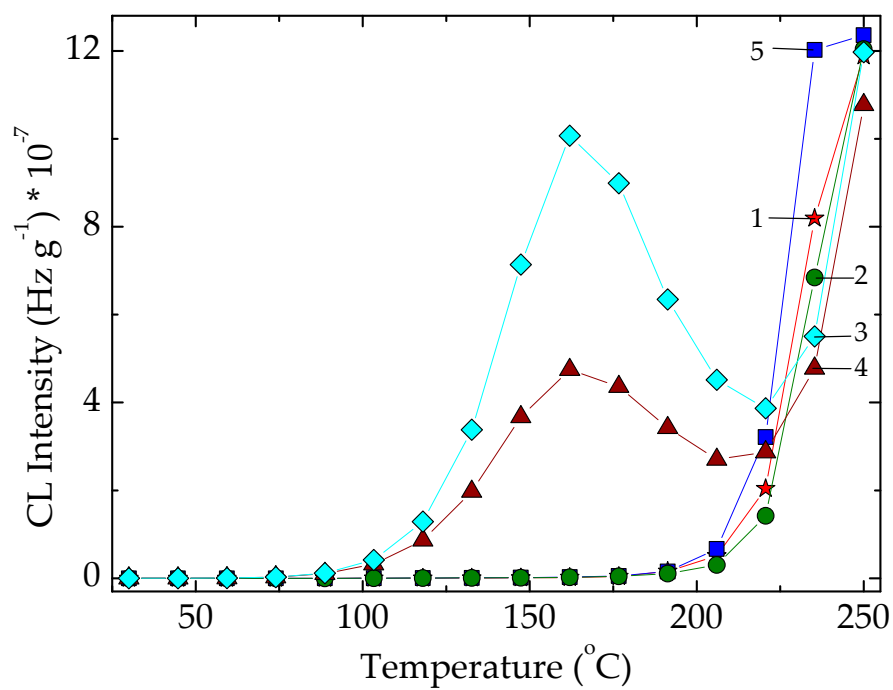
(g) 10.0 °C min<sup>-1</sup>; (h) 15.0 °C min<sup>-1</sup>.



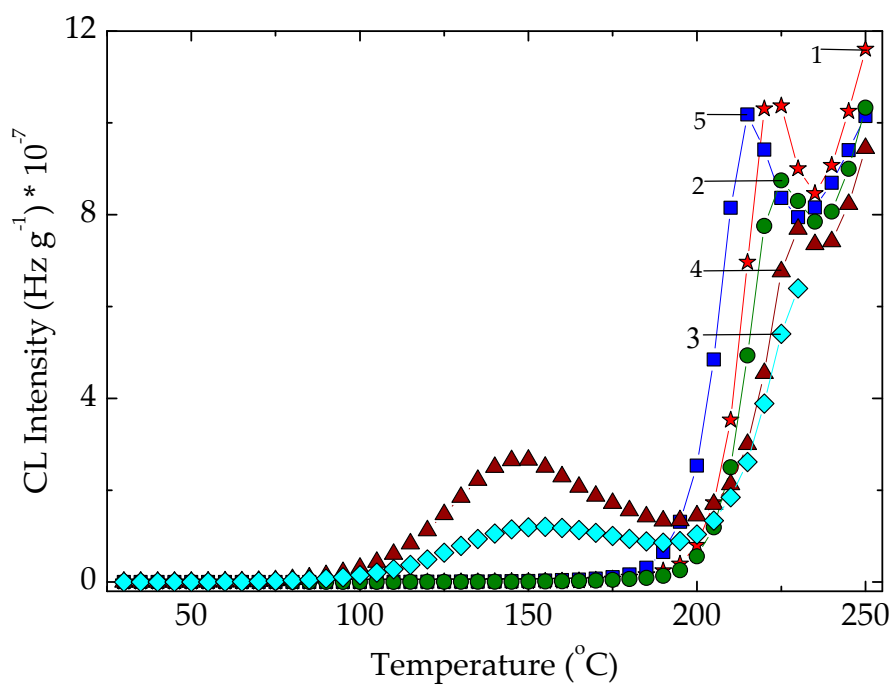
**Figure S1.**



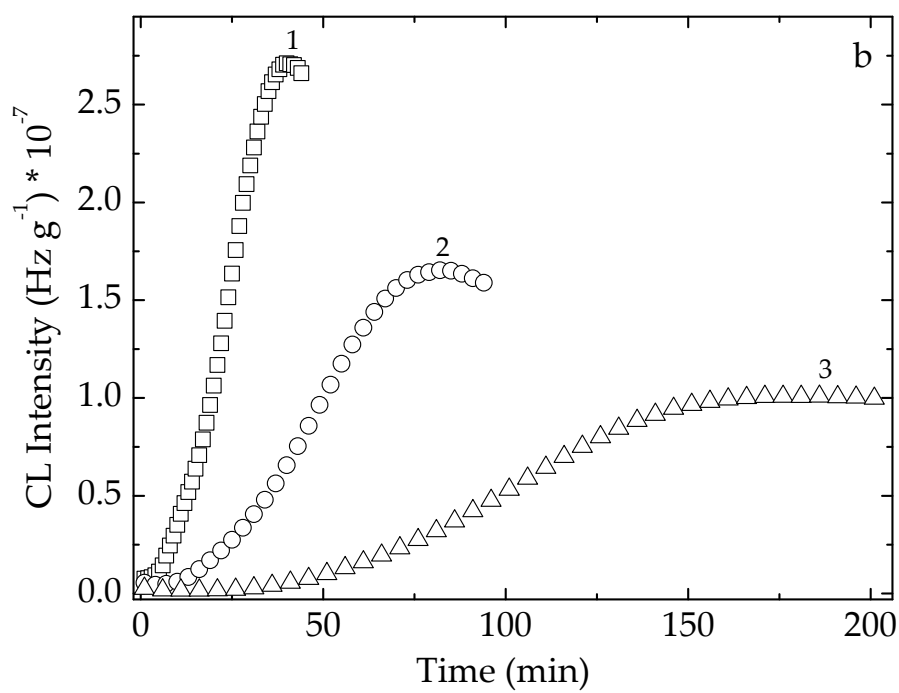
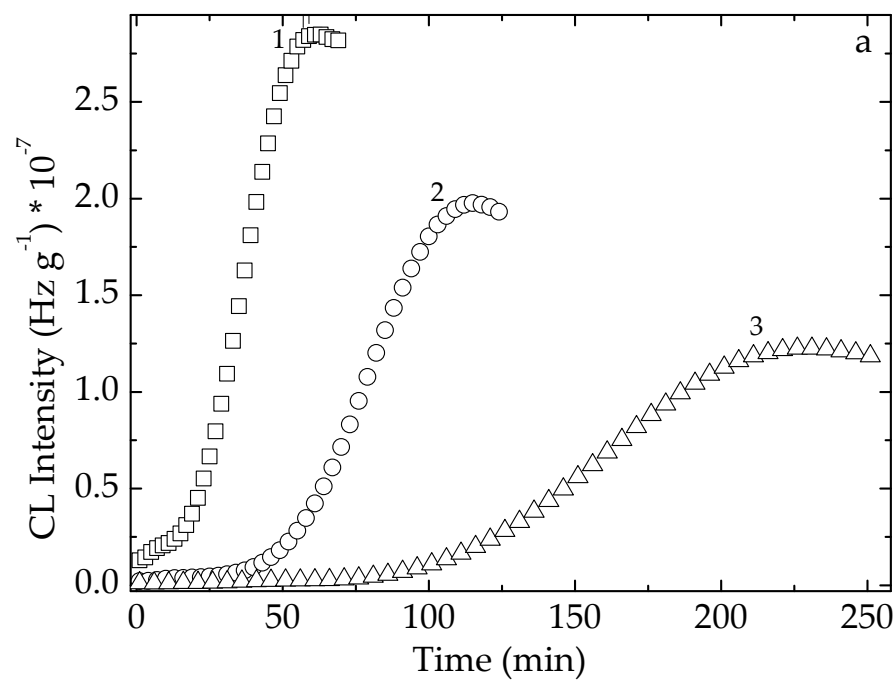
**Figure S2**



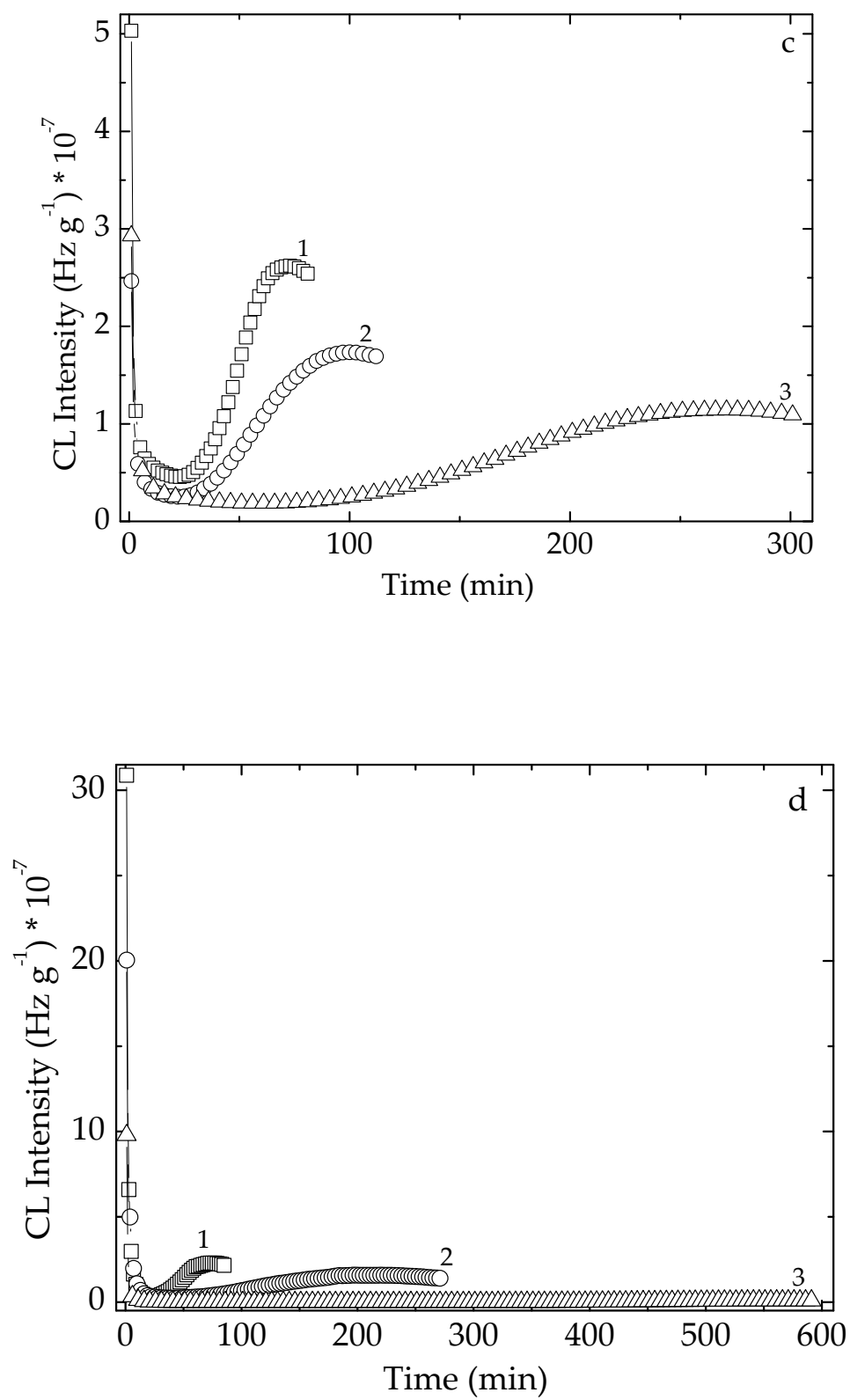
**Figure S3.**



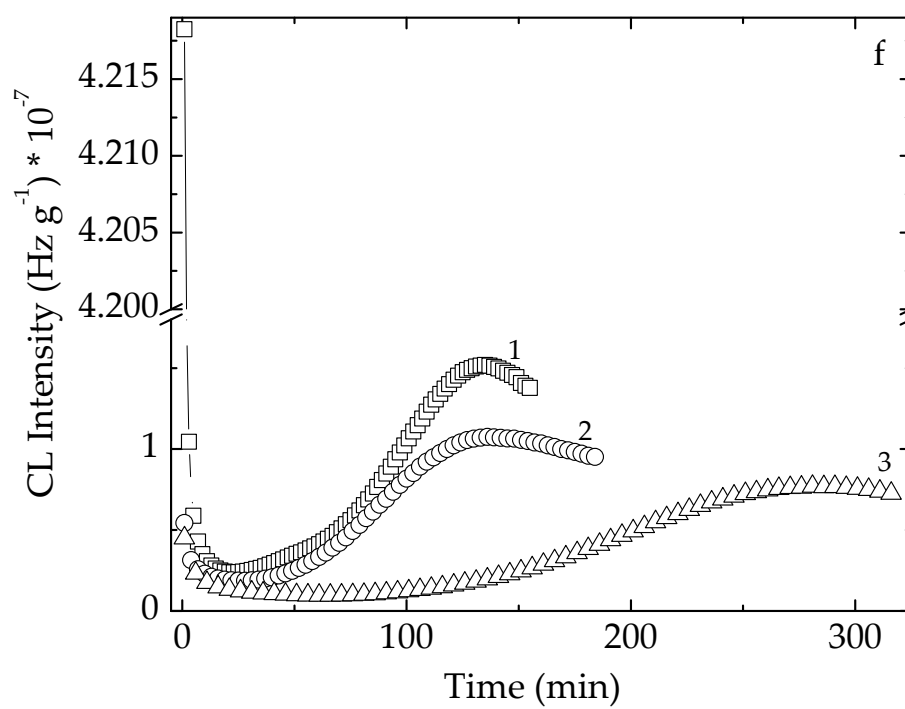
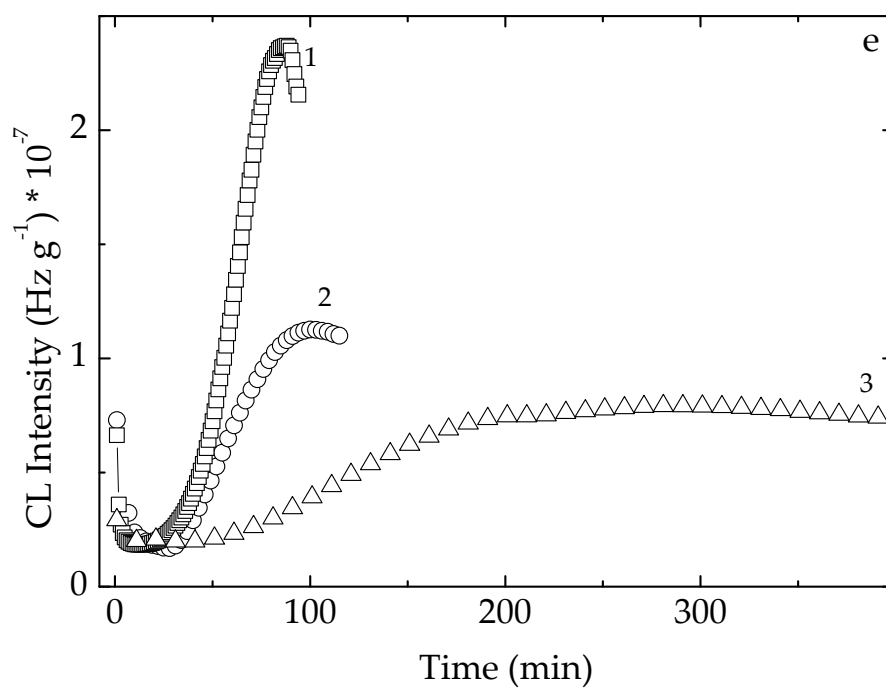
**Figure S4.**



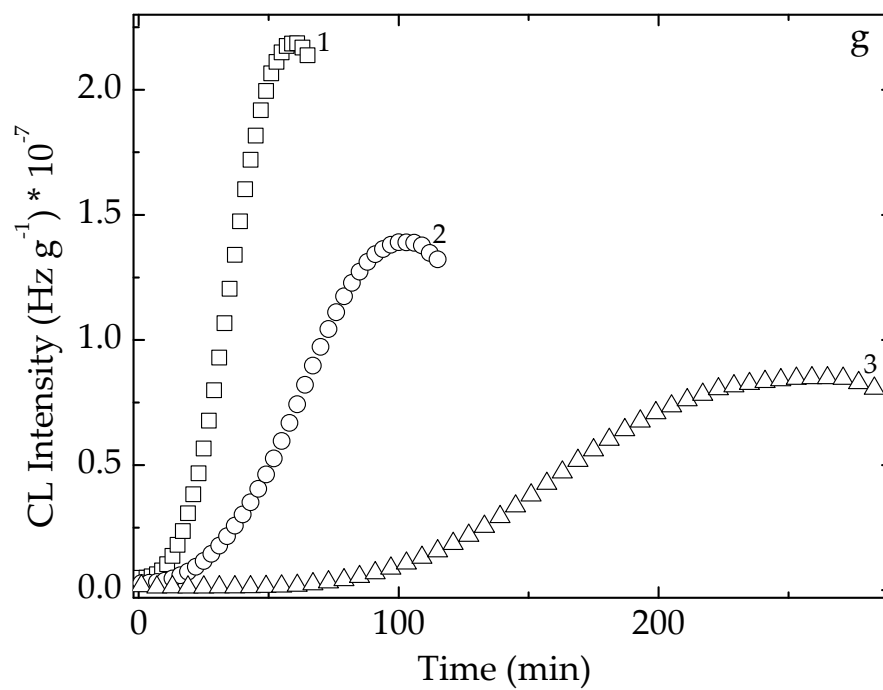
**Figure S5.**



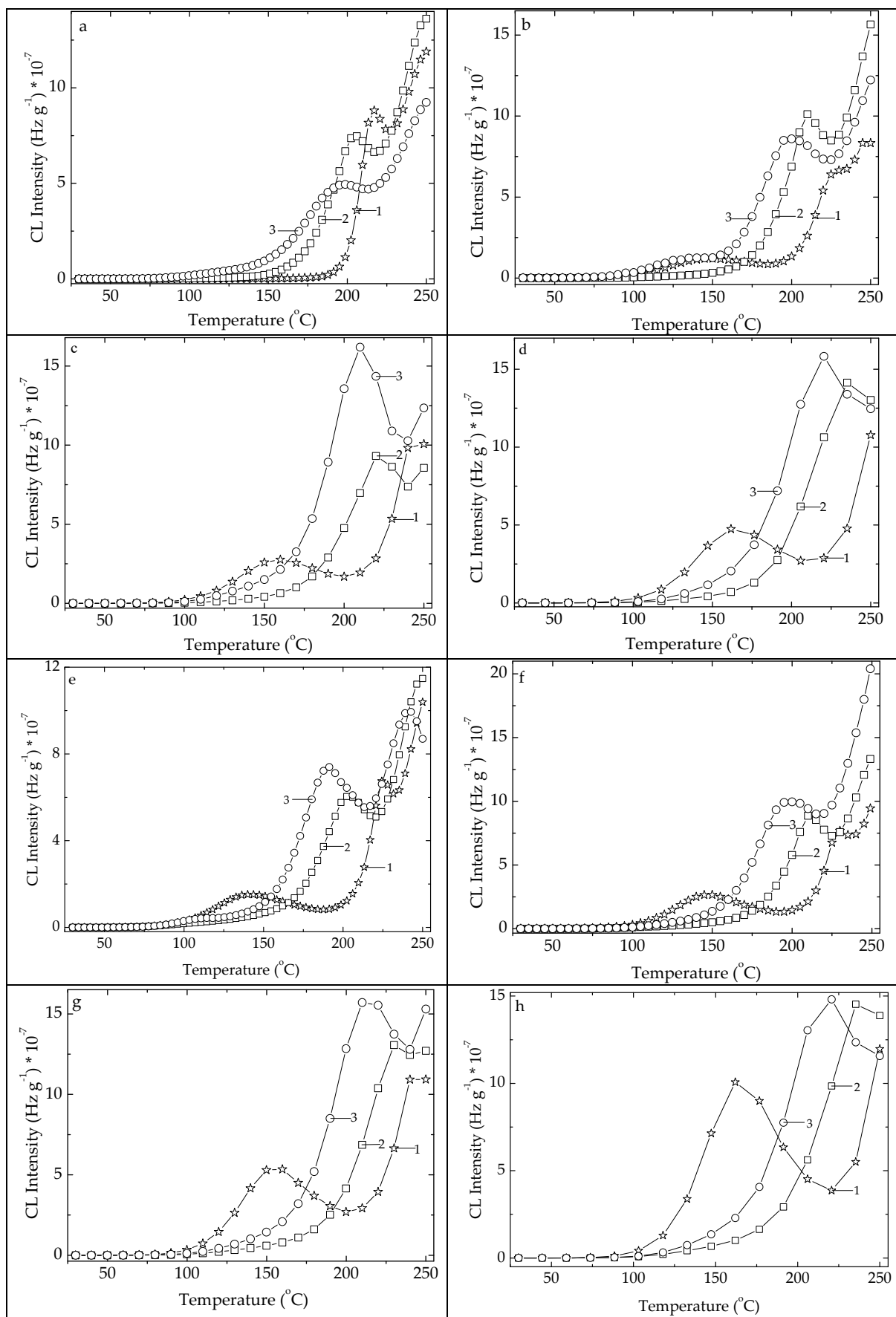
**Figure S5. To be continued**



**Figure S5.** To be continued



**Figure S5.** To be continued



**Figure S6.**



## Table

Table S1. OOT values and their correlation

Dose (kGy)	OOT (K)				Correlation factor
	3.7 °C min <sup>-1</sup>	5.0 °C min <sup>-1</sup>	10.0 °C min <sup>-1</sup>	15.0 °C min <sup>-1</sup>	
0	423	433	448	453	0.98287
25	418	428	443	451	0.99240
100	413	423	438	450	0.99578