Synthesis, Structure, Magnetic and Photoelectric Properties of $Ln_3M_{0.5}M$ 'Se₇ (Ln= La, Ce, Sm; M= Fe, Mn; M'= Si, Ge) and La₃MnGaSe₇

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Compound	La ₃ Fe _{0.5} GeSe ₇	La ₃ MnGaSe ₇	$Ce_3Fe_{0.5}SiSe_7$	Ce ₃ Mn _{0.5} SiSe ₇	Sm ₃ Fe _{0.5} SiSe ₇	Sm ₃ Mn _{0.5} GeSe ₇
Ln (%)	25.1	24.9	27.1	29.6	24.9	26.9
M (%)	5.0	5.8	3.8	4.1	4.1	4.2
M′ (%)	9.3	8.4	8.3	8.5	8.3	8.2
Se (%)	60.6	60.9	60.7	57.8	62.7	60.6
Ratio	2.70:0.54:1:6.52	2.96:0.69:1:7.25	3.27:0.46:1:7.31	3.48:0.48:1:6.8	3:0.48:1:7.55	3.28:0.51:1:7.39
(<i>Ln:M:M'</i> :Se)						

Table S1. EDS elements ratio of the six compounds.

Figure S1. Solid-state UV-visible diffuse reflection spectra of the four pure phases. (a) Spectra of the two Ce containing compounds. (b) Spectra of the two Sm containing compounds.

