

**Single and Double-Doping Effects on the Thermoelectric
Properties of Two Zintl Compounds: $\text{Eu}_{11}\text{Bi}_{8.07(2)}\text{Sn}_{1.93}$ and
 $\text{Eu}_{10.74(2)}\text{K}_{0.26}\text{Bi}_{9.14(2)}\text{Sn}_{0.86}$**

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Table S1 Detailed structural Information including atomic coordinates for the three structure models

model	Eu ₁₁ Bi ₁₀	Eu ₁₁ Bi ₈ Sn ₂	Eu ₁₀ KBi ₈ Sn ₂
space group	<i>I4/mmm</i> (No.139)	<i>I4/mmm</i> (No.139)	<i>I4/mmm</i> (No.139)
unit cell dimensions (Å)	<i>a</i> =12.571 <i>c</i> =18.173	<i>a</i> =12.538 <i>c</i> =18.125	<i>a</i> =12.750 <i>c</i> =18.433
volume (Å ³)	2871.9	2849.3	2996.5

Atomic coordinates			
atom	<i>x</i>	<i>y</i>	<i>z</i>
Eu ₁₁ Bi ₁₀			
Eu1	0	0.2515	0.3110
Eu2	0	0.3334	0.1015
Eu3	0.3259	0.3259	0
Eu4	0	0	0.1655
Bi1	0.2055	0.2055	0.1730
Bi2	0.1484	0.5	0
Bi3	0.1199	0.1199	0
Bi4	0	0	0.3775
Bi5	0	0.5	0.25
Eu ₁₁ Bi ₈ Sn ₂			
Eu1	0	0.2515	0.3110
Eu2	0	0.3334	0.1015
Eu3	0.3259	0.3259	0
Eu4	0	0	0.1655
Bi1	0.2055	0.2055	0.1730
Bi2	0.1484	0.5	0
Sn1	0.1199	0.1199	0
Bi4	0	0	0.3775
Bi5	0	0.5	0.25
Eu ₁₀ KBi ₈ Sn ₂			
Eu1	0	0.2515	0.3110
Eu2	0	0.3334	0.1015
Eu3	0.3259	0.3259	0
K4	0	0	0.1655
Bi1	0.2055	0.2055	0.1730
Bi2	0.1484	0.5	0
Sn1	0.1199	0.1199	0
Bi4	0	0	0.3775
Bi5	0	0.5	0.25

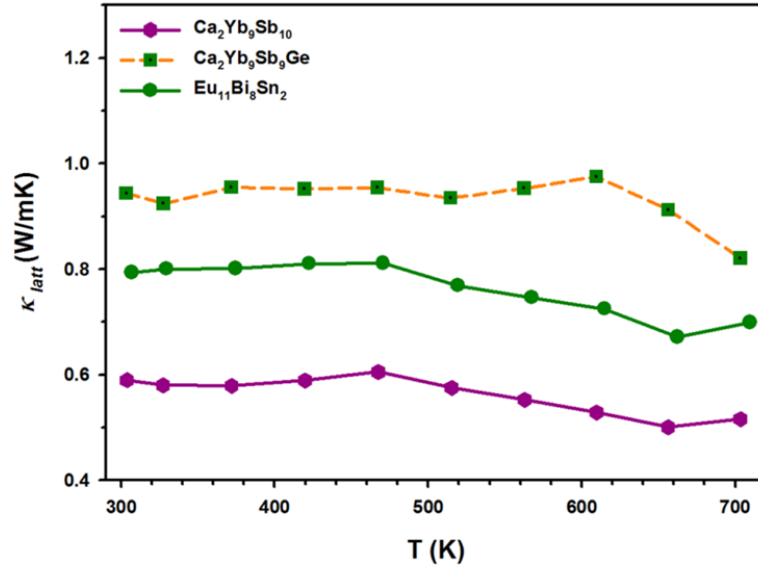


Fig. S1. Temperature-dependent lattice thermal conductivities κ_{latt} of the three compounds measured over the temperature range of 300-700 K.