Supplementary Information (SI) for Inorganic Chemistry Frontiers.

Aqueous-Triggered Self-Destructive Persistent Luminescent Nanoparticles for Dynamic Hierarchical Security Encoding

Yiqing Chen[1,2#], Zhishan Chen[3,#], Xingzhong Chen[3], Ziqing Mao[3], Hongqiang Zhu[3], Jingrui Guo[3], Jialong Xu[3], Ziyi Lin[3], Shaoan Zhang[1]*, Yang Li[1,2,3,*]

[1] Institute of Light+X Science and Technology, Faculty of Electrical Engineering and Computer Science, Ningbo University, Ningbo, 315211, China.

[2] Department of Neurosurgery, Institute of Neuroscience, Key Laboratory of Neurogenetics and Channelopathies of Guangdong Province and the Ministry of Education of China, The Second Affiliated Hospital of Guangzhou Medical University, Guangzhou, 510260, China.

[3] School of Biomedical Engineering, Guangzhou Medical University, Guangzhou, 511436, China.

[#] These authors contributed equally

[*] Corresponding authors

Yang Li: lychris@sina.com

Shaoan Zhang: zsagdut2016@yeah.net

SUPPLEMENTARY FIGURES

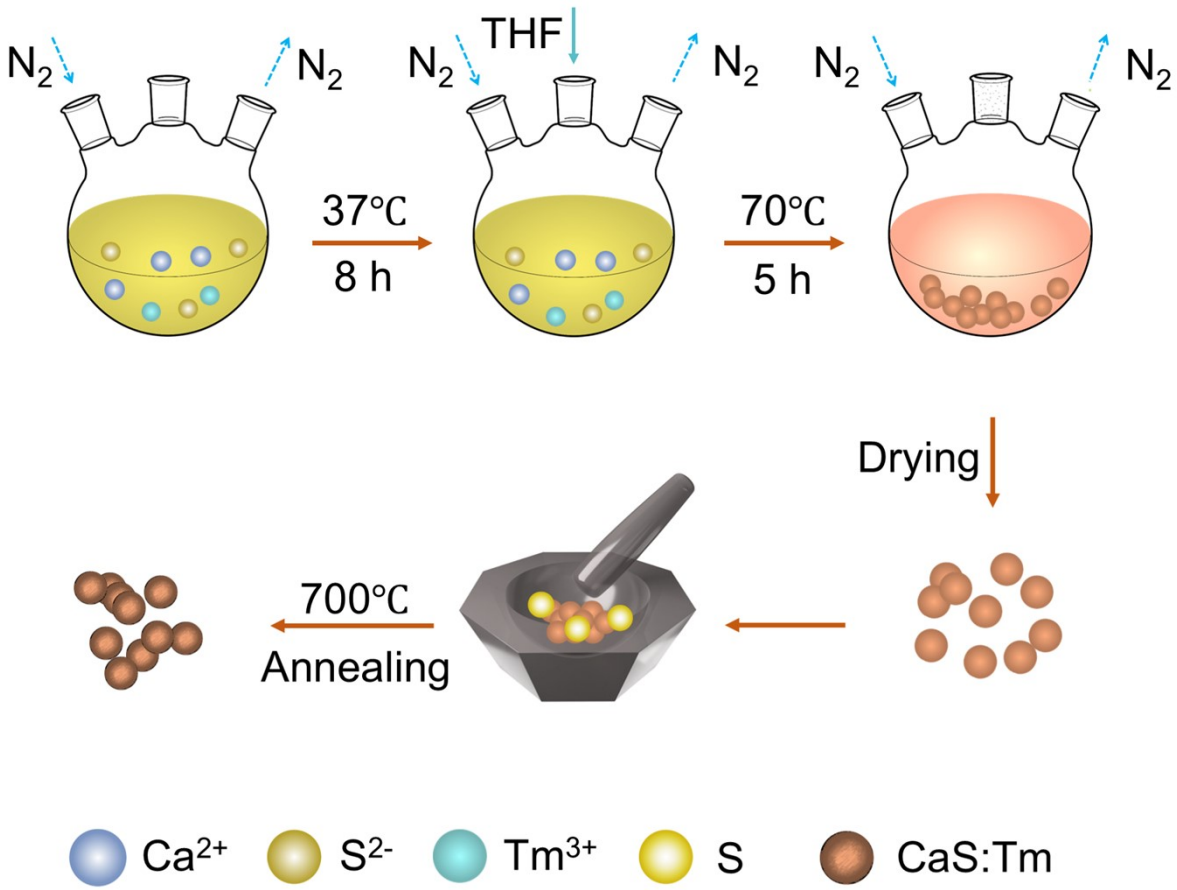

Figure S1. Schematic representation of the preparation process of CaS: Ln NPs via the wet chemical method.

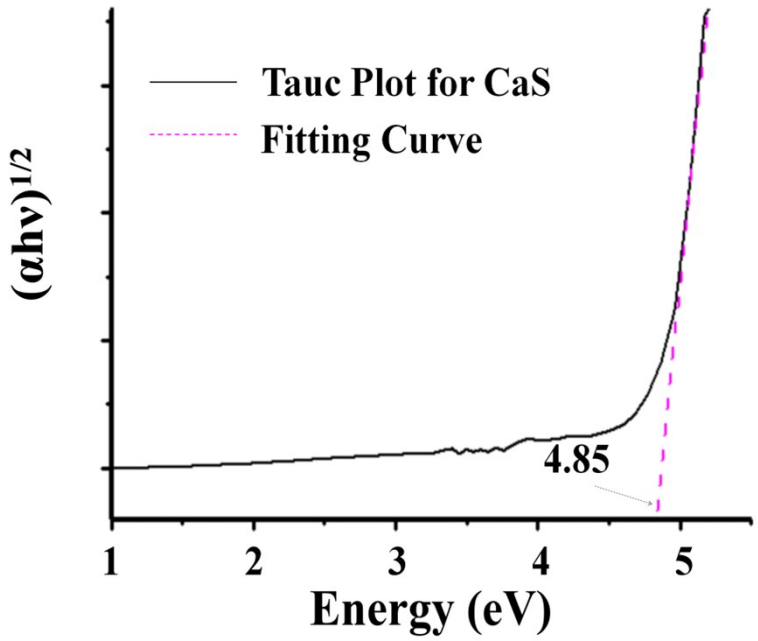

Figure S2. Tauc Plot for non-doped CaS according to diffuse reflectance spectra.

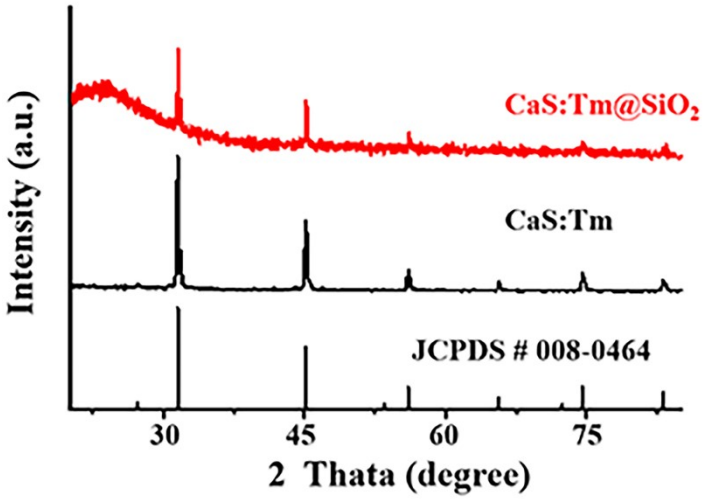

Figure S3. X-ray diffraction of CaS: Tm and CaS: Tm@SiO_2 PLNPs. The XRD patterns of obtained CaS: Tm and CaS: Tm@SiO_2 PLNPs can be well indexed as calcium sulfide phase (JCPDS # 008-0464).

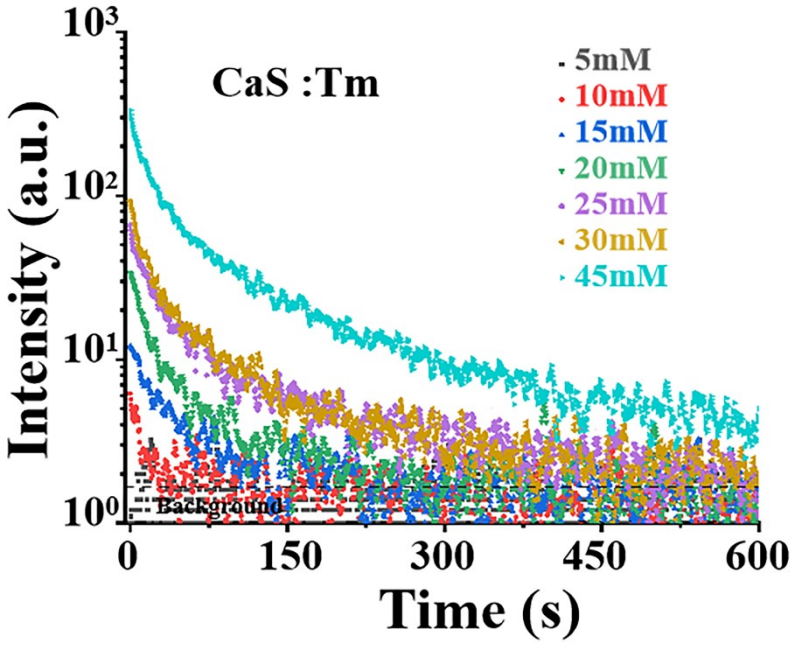

Figure S4. PersL decay curves of CaS: Tm PLNPs with different concentrations, monitored at 810 nm after 254 nm excitation for 30 min.

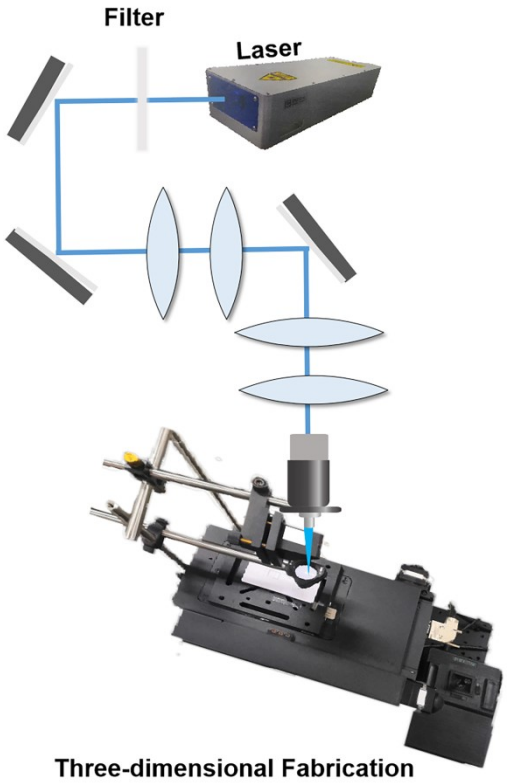

Figure S5. Laser engraving framework.