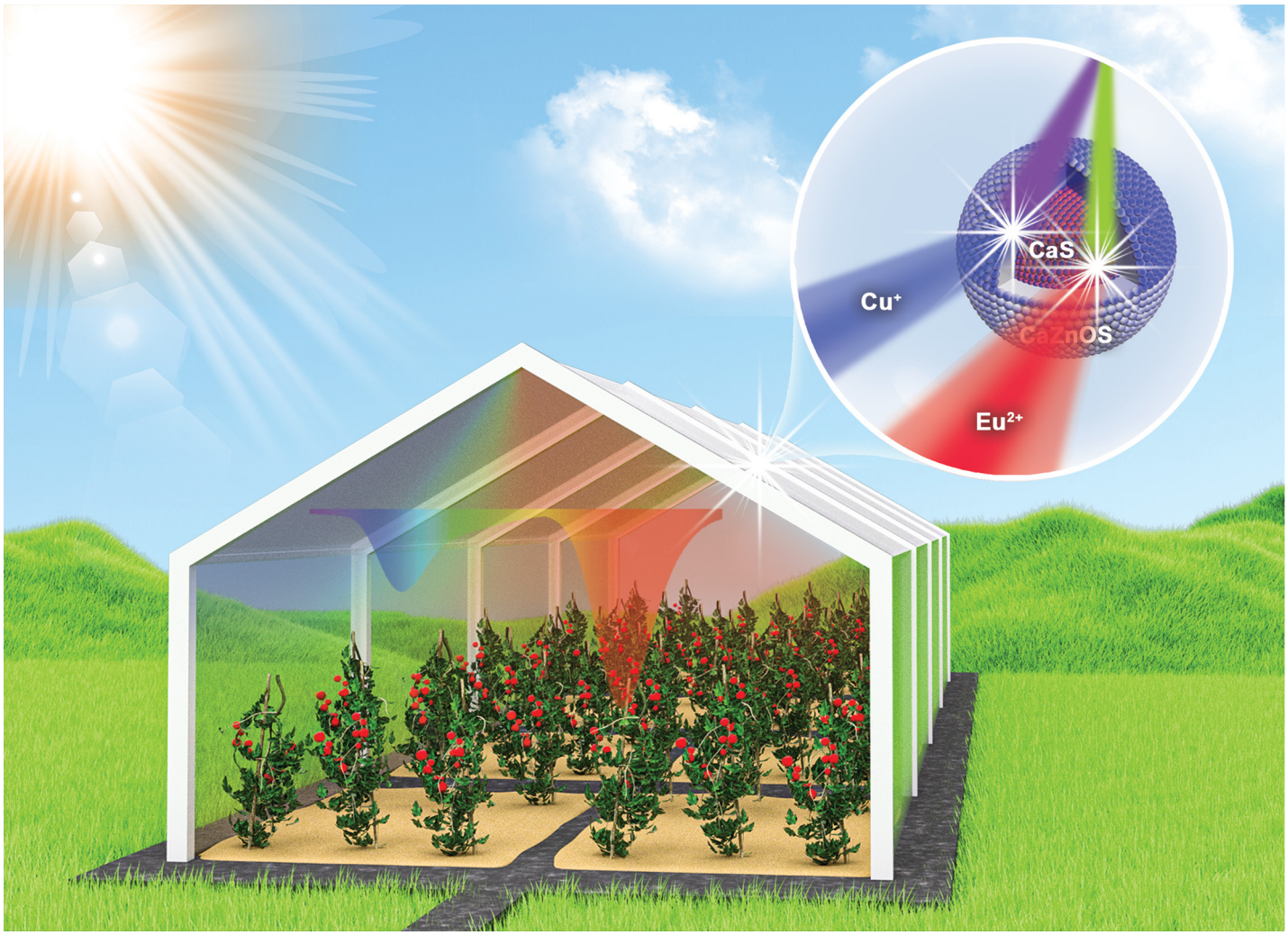
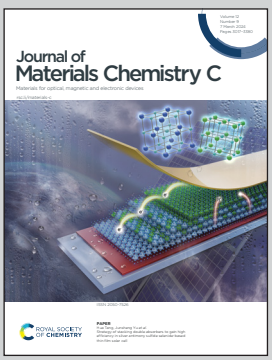


Showcasing research from Professor Lian's laboratory, College of Chemistry and Chemical Engineering, Hunan Normal University, Hunan, China.

Novel dual spectral conversion *via* Eu^{2+}, Cu^{+}-coactivated core–shell-structured CaS@CaZnOS phosphors for efficient photosynthesis of plants

A stable core–shell-structured CaS:Eu^{2+},Cu^{+}@CaZnOS:Cu^{+} phosphor with dual-excitation and dual-emission (DE^2) properties was designed and synthesized. The DE^2 phosphor is an excellent solar spectrum conversion material. Agricultural facilities constructed with the luminescent film laminated glasses or light-conversion films containing DE^2 phosphor can simultaneously convert the green and ultraviolet light component in the solar spectrum into red and blue light, leading to the spectral component in the greenhouse close to the optimum action spectrum of plant growth, and the photosynthetic efficiency of crops is obviously improved.

As featured in:



See Shixun Lian, Xinxian Ma, Zhongxian Qiu *et al.*, *J. Mater. Chem. C*, 2024, **12**, 3090.

ROYAL SOCIETY OF CHEMISTRY

rsc.li/materials-c

Registered charity number: 207890