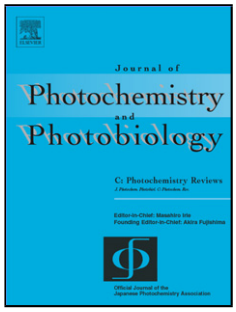


Title: High-efficiency light emission by means of exciton–surface-plasmon coupling

Authors: Koichi Okamoto, Mitsuru Funato, Yoichi Kawakami, Kaoru Tamada

PII: S1389-5567(17)30003-5
DOI: http://dx.doi.org/doi:10.1016/j.jphotochemrev.2017.05.005
Reference: JPR 268

To appear in: *Journal of Photochemistry and Photobiology C: Photochemistry Reviews*

Received date: 28-1-2017
Revised date: 23-5-2017
Accepted date: 25-5-2017

Please cite this article as: Koichi Okamoto, Mitsuru Funato, Yoichi Kawakami, Kaoru Tamada, High-efficiency light emission by means of exciton–surface-plasmon coupling, Journal of Photochemistry and Photobiology C:Photochemistry Reviewshttp://dx.doi.org/10.1016/j.jphotochemrev.2017.05.005

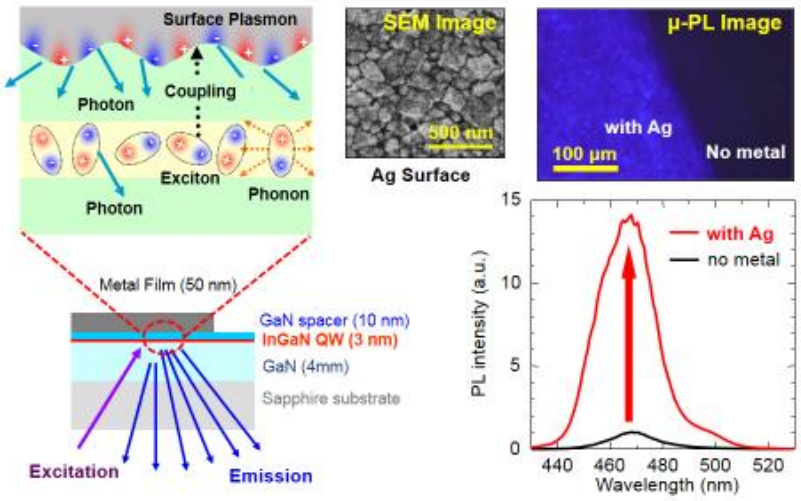
High-efficiency light emission by means of exciton–surface-plasmon coupling

Koichi Okamoto[1]*, Mitsuru Funato[2], Yoichi Kawakami[2], and Kaoru Tamada[1]

[1] Institute for Materials Chemistry and Engineering, Kyushu University, Fukuoka, 819-0395, Japan

[2] Department of Electronic Science and Engineering, Kyoto University, Katsura Campus, Nishikyo-ku, Kyoto 615-8510, Japan

Graphical abstract



Research Highlights

·A brief history and underlying mechanism of the surface-plasmon (SP)-enhanced light emissions were presented.

·Enhancements of the spontaneous emission rates of the excited states were discussed by the terms of the coupling states between an exciton and SP.

·Recent progress and current problems regarding device applications of plasmonic light-emitting diodes (LEDs) were reviewed.

·Future possibilities of SP-enhanced light emissions were discussed to extend the wavelength regions from deep ultraviolet (UV) to infrared (IR).