Characterization of Photonic Devices

Tae Kyu Ahn*,1

¹Department of Energy Science, Sungkyunkwan University, Suwon 16419, Korea

*E-mail: taeahn@skku.edu

Photonic devices use sunlight to produce electricity and/or chemicals, which covers solar cells, photocatalysis, and solar fuels. Recently the efficiencies of new photonic devices have been reported increasing rapidly based on the better optimization of materials and fabrication methods than previous approaches. However, the mechanisms underneath has not still understood well and need to be investigated more. Herein the several approaches to monitor the fast dynamics in photonic devices using time-resolved measurements are introduced. Also the suitable mechanisms to explain the dynamics will be suggested. Suggestions will be also addressed for fruitful discussion.

References

[1] Yin, W.; Kim, N.; Jeong, J.; Kim, K. K.; Chae, H.; Ahn, T.K.; Efficient Heterotransfer between Visible Quantum Dots, *The Journal of Physical Chemistry C*, **2017**. *121(9)*, 4799-4805.

[2] Son, D.-Y.; Lee, C.-R.; Shin, H.-W.; Jang, I.-H.; Jung, H.S. Ahn, T.K. Park, N.-G.. Understanding the role of the dye/oxide interface via SnO 2-based MK-2 dye-sensitized solar cells, *Physical Chemistry Chemical Physics*, **2015**. *17*(22), 15193-15200.