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医工薬融合 GCOE Seminar Series

Center for Medical System Innovation through Multidisciplinary Integration The University of Tokyo

Organics, Polymers and Organic-Inorganic Hybrid Materials for Photonic Applications

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Professor

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Date: Friday, January 11, 2013
Time: 16:00 - 17:30
Venue: #429, 4F, Faculty of Engineering, Bldg.14, the University of Tokyo

Our research focuses on the development of highly efficient organics, low bandgap conjugated polymers and quantum dots for photonic applications such as organic thin film transistors, photovoltaics, light emitting diodes. This involves the design, characterization and testing in devices of surface-engineered quantum dots (QDs), carbon nanotube (CNT)-QDs, polypyrrole nanotube (PPy-NT)-QDs, and low band gap conjugated polymers [1-3]. The hybrid materials can be combined to form polymeric nanocomposites for facilitating the charge separation and enhancing the charge carrier mobility, which can lead to highly efficient power conversion in hybrid photovoltaic devices.

[1] N. Cho, K. R. Choudhury, R. B. Thapa, Y. Sahoo, T. Ohulchanskyy, A. N. Cartwright, K.-S. Lee, P. N. Prasad, Adv. Mater. 19, 232 (2007).
[2] J. S. Kim, W. J. Kim, N. Cho, S. Shukla, H. Yoon, J. Jang, P.N. Prasad, T.-D. Kim, K.-S. Lee, J. Nanosci. Nanotech, 9, 6957 (2009).
[3] K. R. Choudhury, W. J. Kim, Y. Sahoo, K.-S. Lee, P. N. Prasad, Appl. Phys. Lett. 89, 051109 (2006).

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