

Continuous Tunable Lasing Characteristics of Blended Polymer System

Yi Jiang, K. W. Cheah*

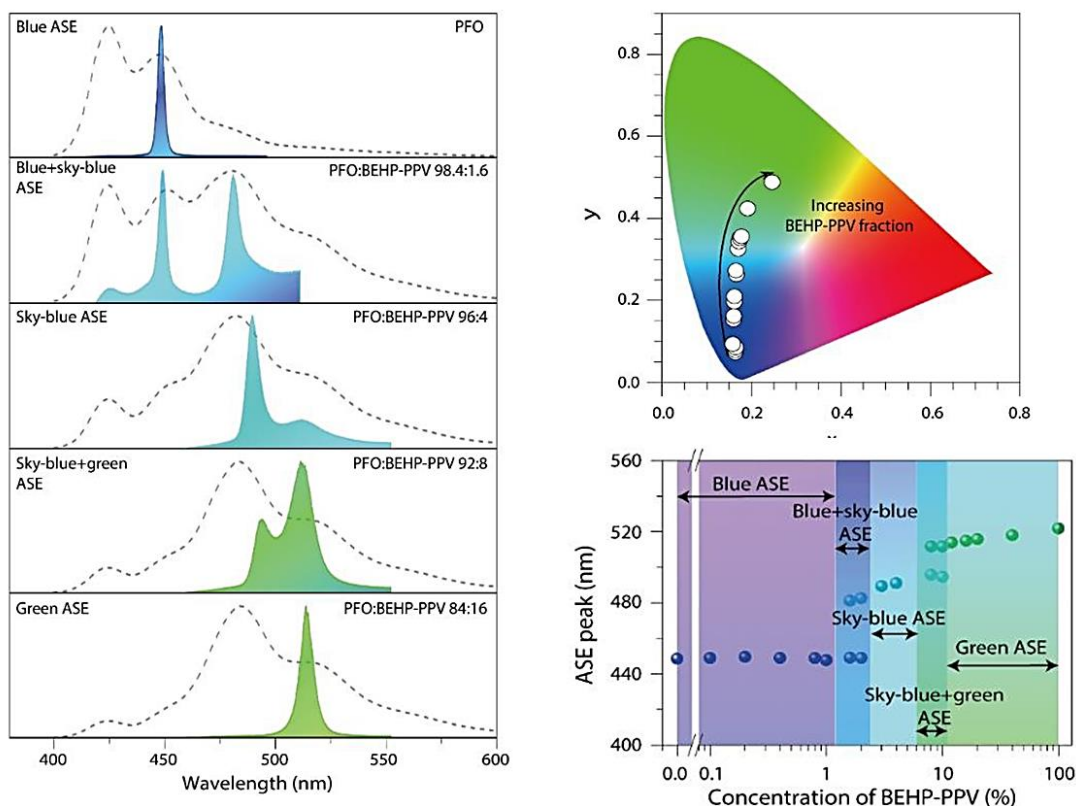
Department of Physics and Institute of Advanced Materials, Hong Kong Baptist University
Kowloon Tong, Hong Kong SAR China

*Corresponding author: E-mail: kwcheah@hkbu.edu.hk

DOI: 10.5185/vpoam.2021.08228

Graphical Abstract

Please make a brief schematic diagram as 'Graphical Abstract'. Insert those Graphics and Synopsis here. Please make sure that this can clearly illustrate your work.



Abstract

Most, inorganic or organic, solid-state lasers lase with single wavelength only. However, to produce tunable laser emission across optical range has yet to be realised. In this report, we show that BEHP-PPV/MEH-PPV blended polymer system exhibits continuous tunable lasing emission property. Different blending ratio produces a shift in the energy transfer preference of the blended polymer, and therefore the energy transfer rate would change with respect to the blending ratio. These changes

create different energy environments for lasing and thus different meta-stable lasing environment is created. Thus, blended polymer thin film with different blending ratio would emit different lasing wavelength, leading to lasing tunability. The understanding on the physics and chemistry of the blended polymer could lead to a new family of blended polymer systems for tunable lasing.

Keywords: Blended polymers; polymer laser; continuous tunable.

Acknowledgements

Financial support from Hong Kong Government ITC project (ITS/174/18) and Hong Kong Baptist University interdisciplinary project (IRCMS/19-20/H01) are gratefully acknowledged.

Biography of Presenting Author



Kok Wai Cheah is the Dr. Elizabeth K.S. Law Endowed Professor in Advanced Materials in Department of Physics. He is also Director and founder of Institute of Advanced Materials, Hong Kong Baptist University and is Fellow of Institute of Physics, UK and IAAM Scientist of the year in 2020. He took his B.Sc. Hon degree in Physics, then M. Sc and DIC in Science of Materials, and Ph. D. in Electrical and Electronic Engineering all at Imperial College, London. After his Ph. D., he spent 10 years in the UK industry. His research areas include optical properties of organic complexes/devices and plasmonic nano-structures.

Citation of Video Article

Vid. Proc. Adv. Mater., Volume 2, Article ID 2108228 (2021)

Full Video Article <http://www.proceedings.iaamonline.org/article/vpoam-2108228>