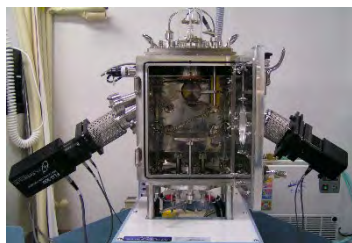


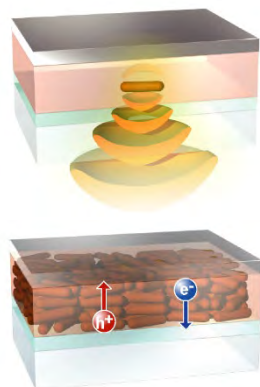
# Analysis and control of structures of amorphous organic films and their applications to optoelectronic devices

Associate Professor Daisuke Yokoyama

Molecular orientation analysis and its applications to OLEDs

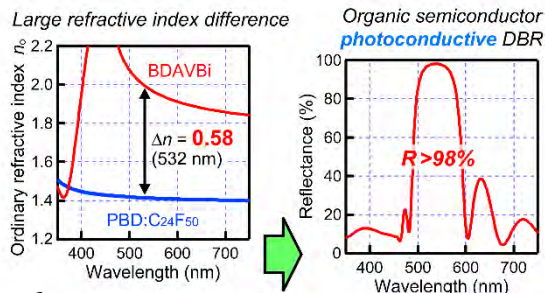


Deposition system equipped with ellipsometer for the analysis of optical property of films

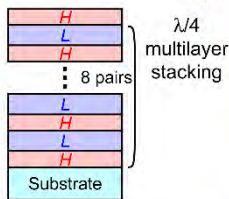


Improvement of OLED performance by horizontal molecular orientation

Refractive index control of amorphous organic films and its device applications



Design and fabrication of photoconductive multilayer mirrors using organic films



Improvement of properties of organic devices by refractive index control



Content:

Amorphous organic films are widely used for organic optoelectronic devices such as OLEDs, because they have advantages of homogeneity, transparency, and surface smoothness. However, their higher-order structures and formation mechanism have not yet sufficiently clarified due to the structural complexity specific to amorphous materials. For further development of device applications using amorphous organic materials, it is necessary to elucidate the details of their structures and built the fundamentals for controlling the physical properties of the films.

We study the higher-order structures of amorphous organic films by spectroscopic experiments and simulations (see the upper-left figure) and investigate their effects on OLED performances (see the upper-right). In addition, we also explore the refractive index control and try its applications to organic devices (see the lower).

Appealing point:

We have many original methods developed by our group and know-how of spectroscopic ellipsometry analysis for the study of structures of amorphous organic films.

Yamagata University Department of Organic Materials Science

Research Interest : Organic optoelectronics

E-mail : [d\\_yokoyama@yz.Yamagata-u.ac.jp](mailto:d_yokoyama@yz.Yamagata-u.ac.jp)

Tel&Fax : +81-238-26-3890

HP : <http://dyoko.yz.yamagata-u.ac.jp>

