

# YOSHIE LAB.

[Materials developed by using polymer dynamics]

International Research Center for Sustainable Materials

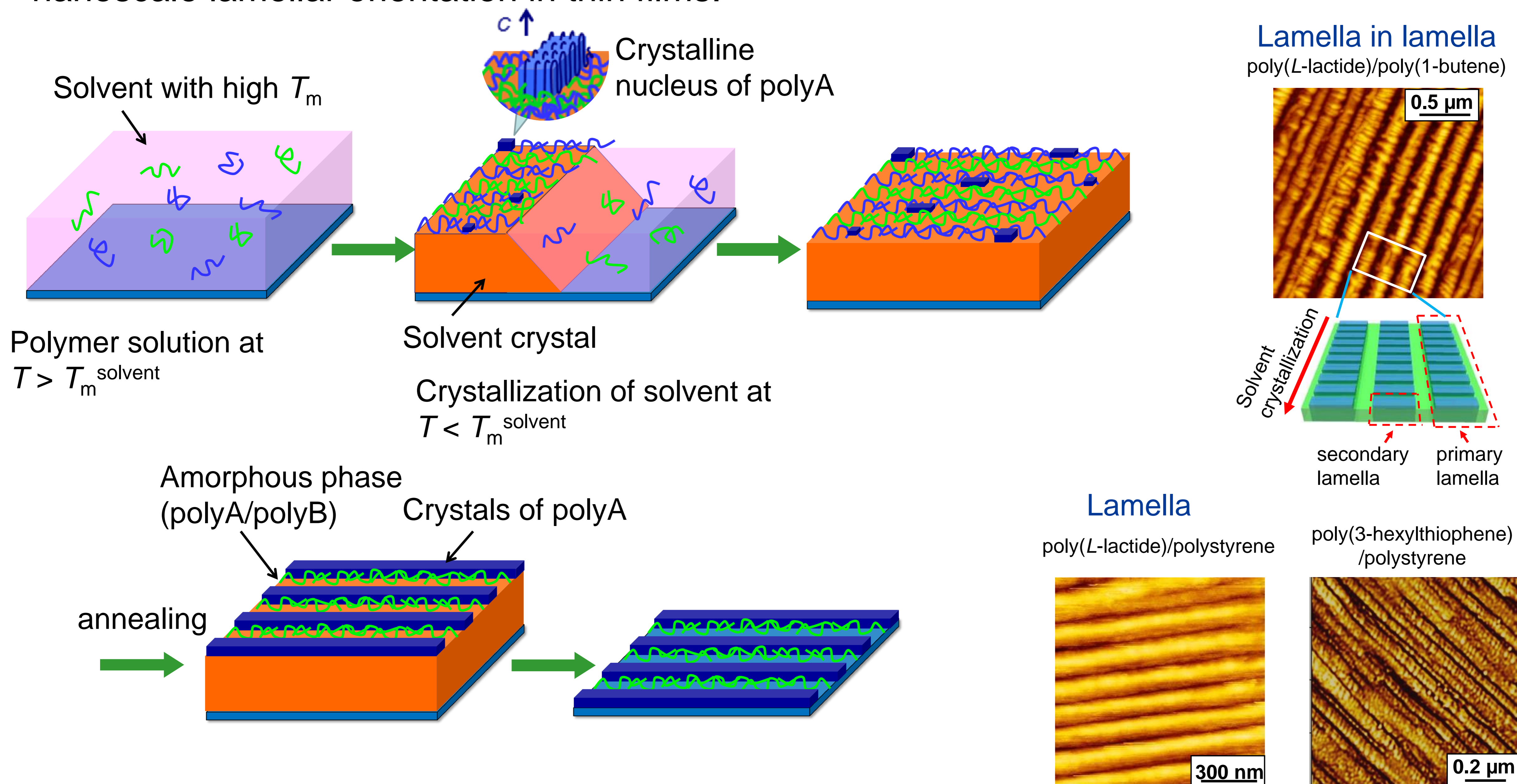
<http://yoshielab.iis.u-tokyo.ac.jp/top.htm>

Department of  
Chemistry and  
Biotechnology

Polymeric and Environmentally Conscious Materials

## Nano-ordered Patterns by Polymer Blends

We successfully obtained a long-range ordered nanoscopic lamellar morphology in polymer blends. Solidification, directional phase separation and structural freezing in the blends are induced instantaneously by solvent crystallization. This method using polymer blends instead of block copolymers may serve as a low-cost facile way to produce nanoscale lamellar orientation in thin films.



## Polymers with Dynamic Bonds

Polymers with novel environmental functions are developed by using dynamic bonds such as reversible covalent bonds and hydrogen bonds. Through dynamic controls of the polymer multi-level structures, various polymers with novel functionalities such as hard/soft conversion, self-healing, tough elastomers and shape memory.

