

2022

PSK-이녹스 신진연구자 웨비나

2022년 1월 26일(수) AM 10:00 - 12:00 | 온라인 상

<https://us06web.zoom.us/j/87941739957>

주최 한국고분자학회

주관 콜로이드 및 분자조립 부문위원회

후원 INNOX

○ 초대인 글

최근 코로나 19 사태의 장기화로 인해 연구자 간 교류의 장이 축소되고 있는 상황에서 한국고분자학회는 우수한 신진연구자와 교류의 장을 확대하고자 노력하고 있습니다. 'PSK-이녹스 신진연구자 세미나'는 우수한 연구역량을 가진 신진연구자를 발굴하여 교류의 장을 넓히고자 (주)이녹스의 후원과 한국고분자학회 주최로 마련한 온라인 세미나입니다. 고분자 분야의 선도연구를 수행하는 신진연구자의 우수한 연구성과를 공유하는 온라인 세미나에 관심있는 많은 분들의 참여를 부탁드립니다.

○ 일정

40분 발표, 20분 질의응답

AM 10:00 - 11:00

Interfacial Interaction Effects on Phase Transition Behavior of PS-b-P2VP Copolymer Confined in Film Geometry

Yeongsik Kim (김영식)

(Department of Chemistry and Chemical Biology, Rensselaer Polytechnic Institute (RPI), Postdoctoral Research Associate)



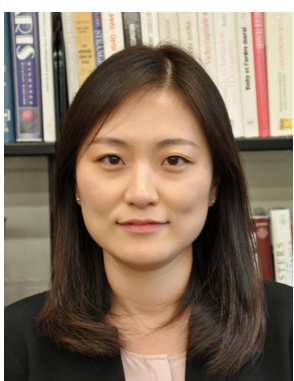
ABSTRACT : Confined in a film geometry, the interfacial interactions at the polymer/substrate and polymer/air interfaces of block copolymer (BCP) thin film geometry strongly influence microdomain orientation and phase transition behaviors. Understanding on the transition behaviors of BCP thin films plays a pivotal role in various applications. Herein, the effects of interfacial interactions at BCP thin film geometry on morphological transition behavior was studied. The preferentially selective interaction toward one block promotes microphase separation, while the neutral substrate that causes a surface compatibilization suppresses microphase separation. The order to disorder temperature (T_{ODT}) of PS-b-P2VP films supported on preferential substrates increases with decreasing film thickness when $t < t_0$, while the T_{ODT} decreases for the BCP films supported on a neutral substrate. Consistent between cylinder- and lamella-forming PS-b-P2VP films, this effect is so intense in very thin BCP films.

AM 11:00 - 12:00

Microstructure-property relationships of stimuli-responsive hydrogels and hybrids

Jinhye Bae (배진혜)

(Department of NanoEngineering, University of California San Diego, Assistant Professor)



ABSTRACT : The design and fabrication of stimuli-responsive hydrogels and hybrids with reversible shape morphing and tunable actuation speed have been of great interest. In this talk, I will discuss our recent progress in approaches to integrate functional materials (i.e., graphene oxide, nanoclay, etc) into stimuli-responsive hydrogels (i.e., poly(N-isopropylacrylamide)). These approaches provide insights into how the presence of functional additives and physical interactions between the additives and hydrogel networks can lead to different internal structures, and thus mechanical properties and responsiveness. Next, I will describe how we have leveraged these insights to precisely program the 3D shapes and control the swelling-deswelling kinetics by external stimuli. Lastly, I will also demonstrate how the different manufacturing processes can affect the microstructures and properties of hydrogels and their hybrids. Such stimuli-responsive shape morphing systems of hydrogels and hybrids will allow us to understand their structure-property relationships and utilize these systems for applications ranging from soft robotics to biomedical devices.

○ 연간일정 (일정은 부문위원회 사정에 따라 변동될 수 있습니다.)

콜로이드 및 분자조립 부문위원회 | 1, 5, 9월 마지막 주 수요일

의료용고분자 부문위원회 | 2, 6, 11월 마지막 주 수요일

분자전자 부문위원회 | 3, 8, 12월 마지막 주 수요일

한국고분자학회
The Polymer Society of Korea