

## 제출초록보기

### 발표분야

에너지 부문위원회

### 발표구분

초청강연Invited lectures

### 발표장치

Projector

### 제목

Towards in situ TEM Imaging of polymer energy materials

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### 키워드

in-situ, TEM, polymers, photovoltaics, batteries

### 우수논문발표상

우수논문발표상에 응모하지 않습니다.

### 발표자료 준비 관련 안내

발표자료 준비 관련 안내문을 모두 읽고 확인하였습니다.

## Towards in situ TEM Imaging of polymer energy materials

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Understanding the intricate structure of polymer materials is crucial for their application in energy-related fields such as catalysis, batteries, and solar cells. This requires comprehensive in situ, operando, and three-dimensional analyses across multiscale domains. While these techniques offer direct observation of molecular deformations and phase transitions, recreating truly representative environments remains challenging. High-resolution TEM imaging is essential for accurately assessing the stability, functionality, and characteristics of polymer energy materials. However, a significant gap persists in replicating real conditions, especially for soft polymer materials. This lecture will explore the efficacy of current three-dimensional structural analysis methods using polymer materials for solar cell and battery applications. We will discuss successful examples and address the improvements needed to advance high-resolution in situ/operando TEM imaging.

