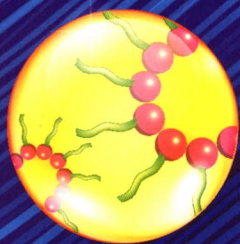
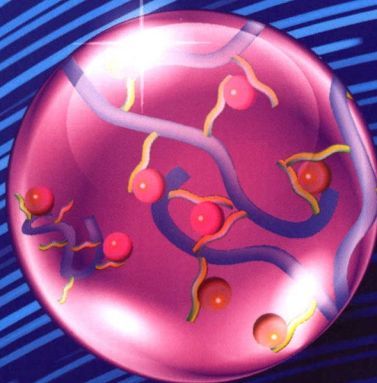
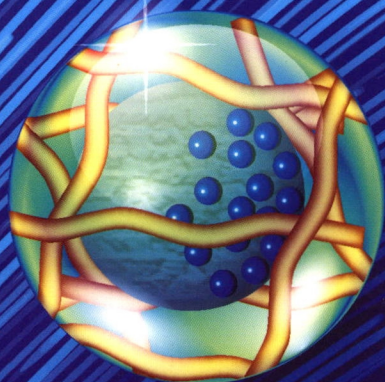


# Engineering

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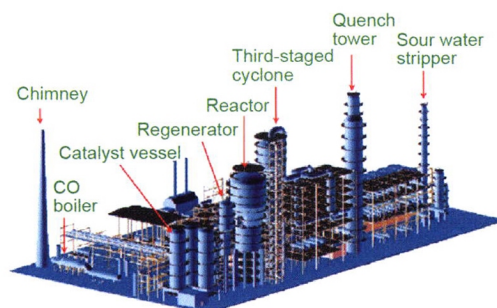
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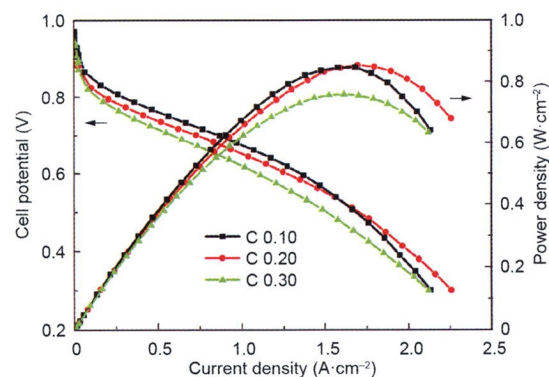
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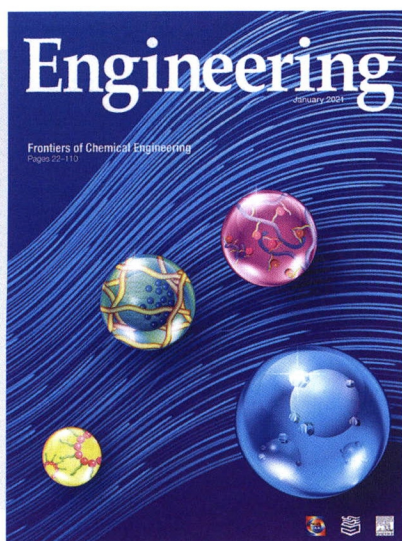
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## ON THE COVER

The interactions of molecules, solid particles, gas bubbles, liquid droplets, and solid surfaces in complex fluids play a vital role in engineering processes. These interactions, which occur at the molecular level, nanoscale, and microscale, significantly influence and determine the macroscopic performance and efficiency of related engineering processes. This issue covers typical intermolecular and surface interactions involved in various engineering processes as well as nanomechanical techniques such as atomic force microscopy and surface forces apparatus for quantifying the interaction forces of molecules and surfaces in complex fluids. Recent progress in characterizing the intermolecular and surface interactions in several engineering systems is reviewed, including mineral flotation, petroleum engineering, wastewater treatment, and energy-storage materials. The correlation of these fundamental interaction mechanisms with practical applications in resolving engineering challenges and the perspectives of the research field are also discussed.



# Engineering Science and Technology

## Create a Better Future



This is the picture of a methanol-to-olefins (MTO) unit in Baofeng's Phase II coal to olefins plant in Ningxia, Northwest China. This unit uses the DMTO technology, which has become one of the main streams for China's ethylene and propylene production since its first commercialization in 2010. As of the end of 2019, 26 MTO units using DMTO technology have been licensed, with a total of ethylene and propylene production capacity of  $14\,000\text{ kt}\cdot\text{a}^{-1}$ . (Photo courtesy of Baofeng)

**Engineering** is intended to provide a high-level platform  
where academic achievements of great importance  
in engineering science and technology  
can be disseminated and shared.

