

2020 International Solvay Chair in Chemistry



Professor Joanna Aizenberg
Harvard University, USA

CLOSING LECTURE

WEDNESDAY 4 MAY 2022 at 4:00 PM

***New bio-inspired materials:
When chemistry meets optics, surface science, and mechanics***

Living systems sense, respond to, and harvest energy from the changing environment by interweaving chemistry, mechanics, optics, electronics, and fluid dynamics across time and length scales. In this lecture, materials chemist Joanna Aizenberg will give us a taste of how the inspiration from nature teaches us to break barriers between these fields and leads to fascinating new concepts in materials design. She will look at a deep sea sponge and envision a green, illuminated skyscraper that harvests energy from the wind. The brittle star's intricate skeleton will inspire dynamic optical systems that can collect light. She will present cilia-inspired adaptive hairy surfaces that alter their wetting, optical, and adhesive behavior via chemo mechanical reconfiguration of tiny nanostructures. Creating liquid-sensing "noses" and novel catalytic materials from chemically patterned photonic crystals inspired by butterflies, or ultra-slippery surfaces that prevent icing and biofouling inspired by pitcher plant – these are just the beginning of the multifunctional, dynamic materials possibilities waiting to be explored at the interdisciplinary border between chemistry, biology, and physics.

**COFFEE AND TEA WILL BE SERVED AT 3:45 P.M AND DRINKS AT 5:00 P.M.
IN FRONT OF THE SOLVAY ROOM**

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