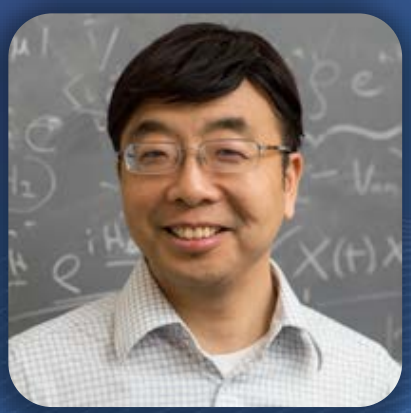
מכון ויצמן למדע
WEIZMANN INSTITUTE OF SCIENCE

Ben May Center for
Chemical Theory and Computation

Ben May Lecture Series



Prof. **Jianshu Cao**

Massachusetts Institute of Technology

Quantum Biology Revisited

Quantum biology is an emerging subject that explores the fundamental role of quantum mechanics in biological processes. In particular, light-harvesting energy transfer, the first step of photosynthesis, has attracted much attention because of its nearly perfect efficiency. The possible role of quantum coherence in energy transfer has stimulated the conceptual development of ‘quantum biology’ and remains intensively debated. I will review recent efforts to address this intriguing question.

Given that closely packed pigment-protein complexes are ubiquitous in photosynthetic organisms, the concept of quantum coherence is likely a recurring theme in light-harvesting systems. I will explain how quantum coherence can be properly defined, and how it facilitates the remarkable efficient and robust energy transfer in photosynthesis. Remarkably, nature does not avoid dephasing, but rather exploits it via engineering of exciton-bath interaction to create efficient energy flow. These structure-function relations observed in natural systems can provide useful insights to guide the optimal design of artificial energy devices.

Wednesday **January 19, 2022**

11:00 AM Gerhard M.J. Schmidt Lecture Hall

For more information and accessibility issues,
please contact **terry.debesh@weizmann.ac.il**