AI in Nature-Inspired Sustainable Materials

NTU-MIT Joint Webinar and Round Table Discussion



Markus Buehler McAfee Professor of Engineering, MIT

Professor Buehler holds academic appointments in both Mechanical Engineering and Civil and Environmental Engineering. In his research, he develops innovative modeling, design, and manufacturing approaches for advanced biomaterials, emphasizing resilience and a broad spectrum of controllable properties from the nano- to the macroscale. His work spans various functional material properties, including mechanical, optical, and biological, linking chemical features and hierarchical and multiscale structures to performance under physiological, pathological, and other extreme conditions, with a particular focus on materials failure.



Shu-Wei Chang

Professor, Dept. of Civil Engineering, NTU Professor, Dept. of Biomedical Engineering, NTU

May 13, 2025, 09:00~10:40

Dr. Chang received his B.S. and M.S. degrees from National Taiwan University and his Ph.D. degree from Massachusetts Institute of Technology. Prior to joining NTU, Dr. Chang had worked as a postdoctoral researcher at Massachusetts Institute of Technology. His research interests are associated with the employment of atomistic and multiscale computational modeling to understand the mechanics of materials, including biomaterials and synthetic materials at the nano- and microscales, with an aim to integrate nanoscale approaches to engineering problems.



Chuin-Shan (David) Chen

Distinguished Professor, Dept. of Civil Engineering, NTU Distinguished Professor, Dept. of Materials Science and Engineering, NTU

Prof. Chen's research interests are associated with the mechanics and physics of materials at the nanometer and micrometer scales. He has significantly contributed to multiscale computational methods, mechanistic machine learning, and their applications to nanomechanics, materials modeling, and bio-inspired structural materials.

| Time | Торіс | Speaker |
|--|---|--|
| Moderator: Chuin-Shan (David) Chen Distinguished Professor, Dept. of Civil Engineering, NTU Distinguished Professor, Dept. of Materials Science and Engineering, NTU | | |
| 09:00~09:05 | Welcome and Opening Remarks | Chung-Chih Wu Vice President of Research and Development, NTU |
| 09:05~09:35 | AI That Can Think, Reason and Discover | Markus Buehler McAfee Professor of Engineering, MIT |
| 09:35~10:05 | Bridging AI and Molecular Mechanics: From Prediction to Creation in Protein and Bioinspired Material Design | Shu-Wei Chang Professor of Dept. of Civil Engineering, NTU Professor of Dept. of Biomedical Engineering, NTU |
| 10:05~10:35 | Round Table Discussion | |
| 10:35~10:40 | Closing | |

· The webinar link will be emailed to participants 2 days before the event.

- The event will be held in English.
- Contact Person : Miss Shen, allyshen@ntu.edu.tw, (02) 3366-6303





