



## **Hai-Quon Mao, Ph.D.**

### **Titles & Department**

Professor, Department of Materials Science and Engineering; Director, Institute of NanoBioTechnology (INBT)

### **Specialization Areas**

Biomaterials, therapeutic delivery, regenerative, engineering, and immunoengineering.

### **Summary of Research & Work**

Dr. Mao's work focuses on developing novel biomaterials for therapeutic delivery through therapeutic engineering, regenerative engineering, and immunoengineering.

Recent projects include:

- Kinetically controlled polyelectrolyte nanoparticle assembly and its scalable manufacturing for delivery of biologic therapeutics
- Engineering polycation- and lipid-based non-viral nanoparticles for delivery of nucleic acid therapeutics via systemic, local, or oral administration

### **Publications**

- [Payload distribution and capacity of mRNA lipid nanoparticles.](#)
- [Multi-step screening of DNA/lipid nanoparticles and co-delivery with siRNA to enhance and prolong gene expression.](#)
- [Quaternary nanoparticles enable sustained release of bortezomib for hepatocellular carcinoma.](#)
- [Size-Controlled and Shelf-Stable DNA Particles for Production of Lentiviral Vectors.](#)
- [Scalable Purification of Plasmid DNA Nanoparticles by Tangential Flow Filtration for Systemic Delivery.](#)
- [Flash technology-based self-assembly in nanoformulation: from fabrication to biomedical applications.](#)
- [Surface-Functionalized PEGylated Nanoparticles Deliver Messenger RNA to Pulmonary Immune Cells.](#)