

## **Research Fellow (Peptide Chemistry and Engineering for Biomedical Application)**

The Centre for Sustainable Materials (SusMat) at the School of Materials Science and Engineering (MSE), Nanyang Technological University (NTU), Singapore is seeking a highly skilled and motivated postdoctoral researcher or a recent PhD graduate to join our research team. The successful candidate will have expertise in peptide chemistry and engineering, cell culture studies, and assessment of intracellular therapeutic activity. The primary objective of this position is to develop and optimize phase-separating peptide coacervates that can readily recruit antibody therapeutics and deliver them intracellularly. The successful candidate will work closely within an interdisciplinary team that will develop a platform to deliver antibodies inside cells, and will include experts in antibody drug conjugates, live cell assays and *in vivo* studies.

### **Key Responsibilities:**

- To develop and optimize stimuli-responsive peptide coacervates capable of recruiting antibody therapeutics by liquid-liquid separation (LLPS). These coacervates can cross the cell membrane and deliver antibodies inside cells (see <https://www.nature.com/articles/s41557-021-00854-4>)
- To carry out *in vitro* drug delivery experiments and investigate intracellular delivery of therapeutics, including antibodies, anti-cancer peptides, etc...
- To closely work with other researchers designing *in vivo* studies of the same therapeutics.
- To develop live cell assay and cell biology protocols to study the *in vitro* efficacy of antibody therapeutics delivered with our peptide coacervates technology.
- To supervise post-graduate students, write scientific papers, and interact with our expert collaborators in peptide design, live cell assays, antibody drug conjugates, and *in vivo* studies.

### **Requirements:**

- **Education:** PhD in Chemistry, Materials Science, Bioengineering, or Biochemistry.
- **Expertise:** Strong background and hands-on experience in peptide synthesis and peptide conjugates. Proficiency cell culture and fluorescence microscopy techniques .
- **Research skills:** Demonstrated ability to design and conduct experiments, analyze data, and troubleshoot experimental challenges. Experience with biophysical characterization techniques is highly desirable.
- **Analytical mindset:** Excellent analytical and problem-solving skills with the ability to interpret complex data and draw meaningful conclusions. Strong attention to detail and the ability to work independently as well as part of a team.
- **Communication and publication:** Strong verbal and written communication skills. Proven ability to prepare scientific reports, present research findings, and publish in reputable scientific journals.

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