

第7屆

香港大學生創新及創業大賽

The 7th Hong Kong University Student
Innovation and Entrepreneurship Competition



BME Students Win in the 7th Hong Kong University Student Innovation & Entrepreneurship Competition 2021

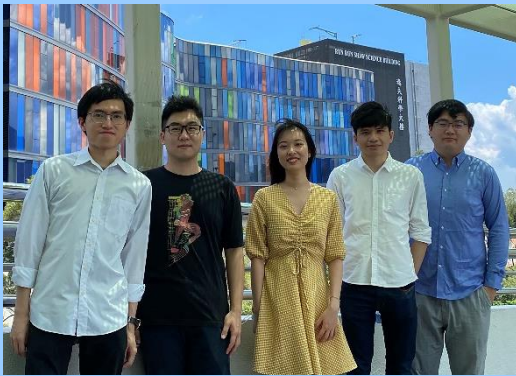
<https://www.hkchallengeplus.com/en/news/>

Award	Project Title	Awardees
Category: Innovation (Life Science)		
Second-prize	Highly Dynamic Nanocomposite Hydrogels Self-assembled by Metal Ion-ligand Coordination	YUAN Wei Hao, LAI Chun Him Nathanael, TUNG Lok Him (BME PhD Students) and their teammates from Orthopaedics & Traumatology (YAO Zhi, XU ShunXiang, GUO Jia Xin)
Third-prize	Age-Induced Deterioration of Neuro-Muscular Junction in Sarcopenia: Study on Gene Expression and Morphology	NG Wing Fai Sofie (BME UG Student)
Merit	In Planta Gene Regulation by Nanotechnology	LAU Yolanda Fong Yung (BME UG Student) CHIU Yee Ting (BME PhD Student)

Here is the brief introduction of the award projects:

Second Prize (Life Science)

YUAN Wei Hao, LAI Chun Him Nathanael, TUNG Lok Him (BME PhD Students) and their teammates from Orthopaedics & Traumatology (YAO Zhi, XU ShunXiang, GUO Jia Xin)

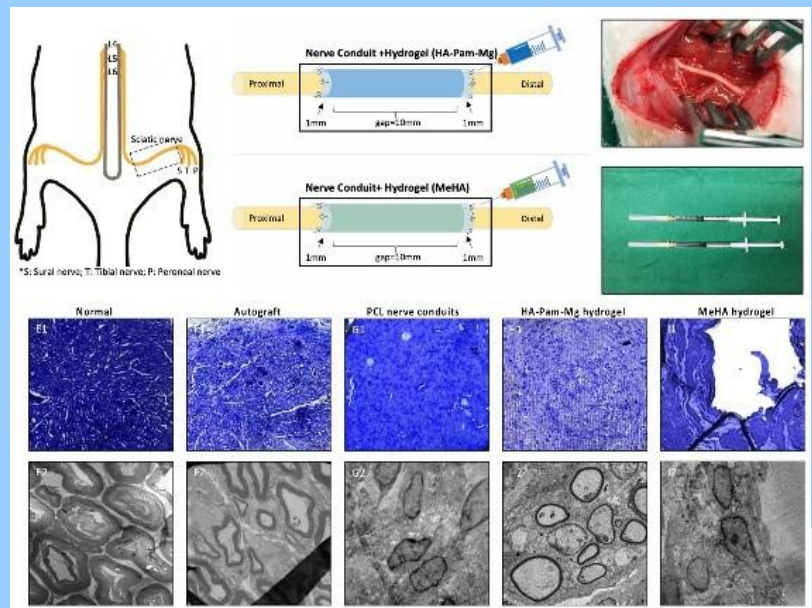
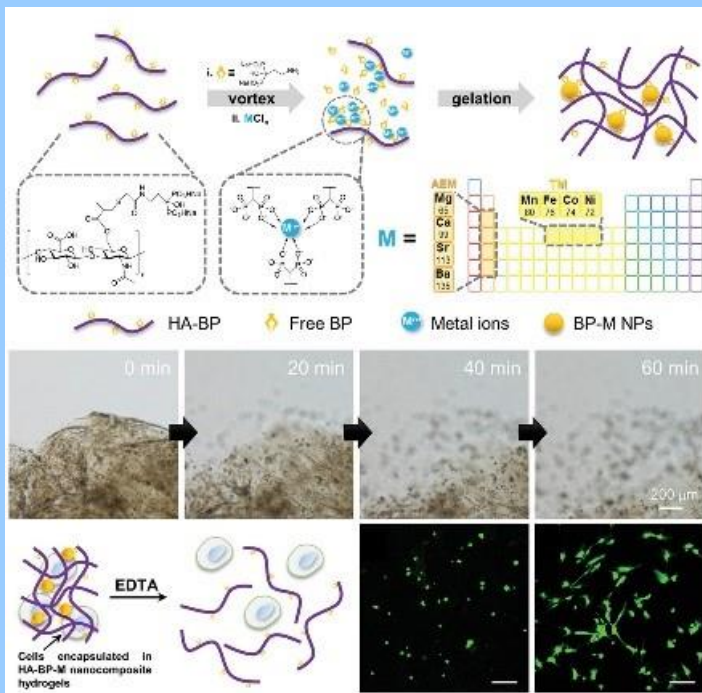


Project Title:

Highly Dynamic Nanocomposite Hydrogels Self-assembled by Metal Ion-ligand Coordination

The team demonstrated a generalized approach to fabricate self-assembled nanocomposite hydrogels via the dynamic ligand–metal-ion coordination and studied the effects of different metal ions on the hydrogel properties. Because of the dynamic coordination between BP and metal ions, such nanocomposite

hydrogels exhibit remarkable dynamic properties, such as excellent injectability, rapid stress relaxation, efficient ion diffusion, and tunable mechanical properties. Their findings show that the HA-BP-Mg hydrogel can effectively promote axon growth and functional recovery post sciatic nerve injury, thereby giving a promise for the potential translational applications.



Third Prize (Life Science)

NG Wing Fai Sofie (BME UG Student)



Project Title:

Age-Induced Deterioration of Neuro-Muscular Junction in Sarcopenia: Study on Gene Expression and Morphology

Sofie's winning project is led by Prof. CHEUNG Wing-hoi Louis and Bao, Zhengyuan from the Department of Orthopaedics and Traumatology. The project demonstrated the relationship between the alteration in mRNA expression of Agrin-Lrp4-MuSK-Rapsyn-Dok7 pathway, AChRs subunits, hence, morphological changes in Neuromuscular Junctions and sarcopenia. This will contribute to the identification of aberrant signalling pathways and possible proteins involved in the therapeutic approach, treatment, and diagnosis of sarcopenia.

Merit (Life Science)

LAU Yolanda Fong Yung (BME UG Student)

CHIU Yee Ting (BME PhD Student)

Project Title:

In Planta Gene Regulation by Nanotechnology

The project demonstrated a novel way to deliver genes into onion root tissue, which overcomes the barriers of the plant cell membrane and cell wall. We designed a nano-based platform, and explored how various parameters such as the size of nanoparticles, incubation duration and surface modulations with polymer affected cellular uptake. We demonstrated optimisation of these parameters to achieve higher uptake efficiency in onion root tissue, and accomplished successful uptake of DNA nanostructures.