

# BME Student Wins Gold Award at ASM Technology Competition 2022



Mr. TSANG Chung Yin Justin, who is our final year BME undergraduate student, has won a Gold Award from the ASM Technology competition 2022 with the project titled *"Colloidal Copper-doped ZIF-8 as a Potential Treatment for Atherosclerosis"*. The ASM Technology Award is a yearly event that promotes technological innovation in Hong Kong and recognizes students for their accomplishments in technology.

The winning project is supervised by Prof. Sebastian Beyer with the support from Prof. Jonathan Choi, Prof. Megan Ho, and Prof. Anthony So. It demonstrates a colloidal biocatalyst, copper doped Zeolitic Imidazolate Framework 8 (ZIF-8), that can convert blood borne s-nitrosothiols into nitric oxide. The product can be used as a targeted and sustained colloidal drug carrier for acidic atherosclerotic plaques.

"I am always excited by research that could solve real-life problems. I have been lucky enough to work on a potential treatment of Atherosclerosis for the past two years of my study. Atherosclerosis leads to clogging of blood vessels and is undoubtedly one of the most dangerous conditions, as it may lead to heart attack, and stroke that are often fatal. I have been working closely with Professor Sebastian Beyer to put together a novel nanomedicine formulation for atherosclerosis treatment – a metal-organic framework named copper-doped ZIF-8. This metal-organic framework aims to selectively disintegrate around the atherosclerotic plaques due to its pH-responsive disintegration, releasing the Cu(II) ions. The Cu(II) ions are generally known to act as a catalyst for the conversion of our blood-borne s-nitrosothiols into NO. NO and copper ions have been shown to alleviate the plaque condition and future animal studies may point toward the potential of treating atherosclerosis. I have learned a lot from this journey, and I am happy that our idea was recognized by the ASM Panel." Justin said.



*It is our honour to share the happiness with Prof. Martin Wong, Dean of Faculty of Engineering and Prof. Anthony So, Associate Dean (Student Affairs) of Faculty of Engineering, of the ASM Gold Award obtained from our student, Justin.*