



香港城市大學
City University of Hong Kong

Correcting the misinterpretation of DNA from chemistry students by interactive teaching and learning platform

Project Number: 6000638

Principal Investigator: Dr Peggy Lo Pik KWAN

Grant Type: TDG

Abstract:

The misinterpretation of DNA from the chemistry students is greatly restricted their interests on learning DNA in chemistry aspect. They realize that DNA is a hereditary material carrying the genetic information in humans and almost all other living organisms for growing, development, functioning and reproduction. There is nothing related to chemistry. Currently in the classical four major branches of chemistry such as organic, inorganic, physical and analytical chemistry, there is no specific DNA teaching and learning component for the undergraduate chemistry students. In this regard, PI proposes to have group projects for the undergraduates to learn more about DNA in the chemistry aspect. This project aims to furnish students with chemical knowledge of DNA and experimental technique of creating synthetic DNA polymer. In this project, groups of students will be guided by RA to conduct hand-on experiments in the following five aspects: sequence design, solid-phase synthesis, purification, quantitation and characterization of the chemically synthetic DNA strands. Students involved in this project will discover that the molecular structures, synthetic mechanisms and characterization of DNA are highly relevant to the knowledge of organic and analytical chemistry. This teaching and learning platform will not only raise chemistry student's passion to delve deeper into the chemistry of DNA, but also allow them to explore, discover and understand clearly the chemistry behind this biological macromolecule and the chemistry role of DNA. This project is highly sustainable because knowledge gained by the students can further be applied to other final year projects/summer research projects under the supervision of several faculty members in the CHEM department.