



香港城市大學
City University of Hong Kong

Teaching-as-Research in Modern Physics

Project Number: 6000567

Principal Investigator: Dr. Xin WANG

Grant Type: TSG

Abstract:

As a substantial part of the curriculum of several Physics and Engineering majors, Modern Physics remains difficult to teach and learn. While they are necessarily more complicated than the classical physics they themselves have developed upon, the main impeding factor is that many ideas in modern physics are considerably counterintuitive. In this project, the PI plans to use his expertise and experience in conducting research in this area to bridge the gap of learning and research in modern physics. In particular, the PI, together with a Research Associate, will design classes and tutorial sessions which naturally lead the students to discover the physical laws using their own intelligence and reasoning, and will encourage students to have their independent understanding about how the subject is logically organized. We will craft research problems into tutorials accessible to elementary learners. We will also interact with interested students on potentially advanced research-like topics. The PI expects that the Modern Physics part of AP1203 (General Physics III) and related courses are taught in a discovery-oriented way, and by engaging in the discovery themselves, the student will find these materials much more accessible, and will also have certain experience on physics research.