SafeChemVR Revised Abstract

Student safety is crucial in creating an effective learning environment, particularly in a chemistry lab setting. We, at SafeChemVR, have proposed to create an immersive virtual lab experience for students to become accustomed to procedures and events common to the lab without having to be physically present. An immersive lab forces a student to participate in safety protocols and attend to the necessary guidelines. This virtual environment will lead the user through a guided tour of the lab, which has been rendered to duplicate a Villanova chemistry lab while describing certain equipment and explaining processes that must be completed to ensure that the user has a basic understanding of what occurs in the lab. The project's goal is to heighten the user's response and allow them to become familiar when they are expected to actively participate and demonstrate safe behavior when required to be in the lab.

We aim to create an immersive virtual lab safety training for students to become familiar with the equipment and safety procedures in a chemistry lab at Villanova. The environment will allow a student to identify lab equipment that will be used in the upcoming semester as well as emergency response equipment so that they are prepared for any possible emergency scenario. Our software will require active participation from the user to identify crucial elements of a lab and demonstrate they are capable of responding to emergencies when necessary, to create a safe and educational lab environment.