SimuLabs

Experimenting in Augmented Space

Motivation behind the project:

Educational reasons:

We all are well acquainted with the fact that doing something practically leaves a long lasting impression in our brain.We have personally witnessed that students preparing for jee are usually devoid of this practical knowledge as they don't get time to go to the labs and perform the experiments.This really recedes their practical knowledge and hampers their learning process.

Apart from this having a look at a mechanism from every detailed view is itself a blasting experience and knowledge.

Economic Factors:

The reason behind its slow progress is the fact that for maintaining labs and constructing 3D Models a lot of capital is needed for infrastructure,buying assests etc Many schools are not able to afford this.Moreover ,a supervision is required to check that whether assests are being handled with care or not.
Many chemical reactions which can’t be shown in real world can be simulated to appear as if they are happening in reality.

Environmental factors:

Besides all these reasons ,the assests used in chemistry,Biology labs like various chemicals ,glass instruments etc pose a serious threat to environment if not disposed off carefully.

How we are trying to curb it ?

So in order to curb the above mentioned problems and make practical education feasible to all , we have created a chemistry lab in Augmented reality .

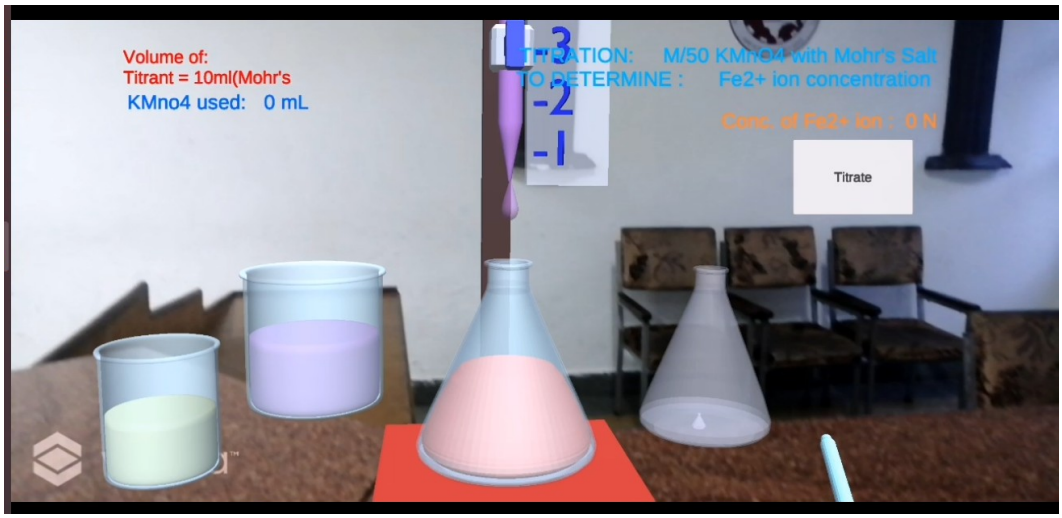
- Students no longer need to go to chemistry labs .All they need is to have knowledge, with best UI/UX of the Software and Virtual Notes on Screens.
- The companies may present their estate, product Models in 3-Dimensions along with hand controlling of the model representations.

Technicalities involved:

- ***Manomotion SDK 2.0***(software development kit):We are using it to incorporate

precise hand -tracking for performing gestures for handling lab assests efficiently.

- ***Computer vision:*** It's basically being used for multiple colour tracking for detecting various objects in our AR interface .
- ***Blender:***It's a free and open 3D creation suite,and we are using it for modelling and simulation of various lab assets.
- ***Unity3D:*** A powerful cross-platform 3D engine and a user friendly development environment.I
- ***ARcore/Vuforia:*** It's a platform for building augmented reality experiences.So,after our project has been made in the virtual setup we will be using it for integrating the virtual content with SLAM(Simultaneous Localisation and mapping).



A view of the Software in development phase, things left to do – Mixed reality inputs and 3D models for the Atoms and estates.