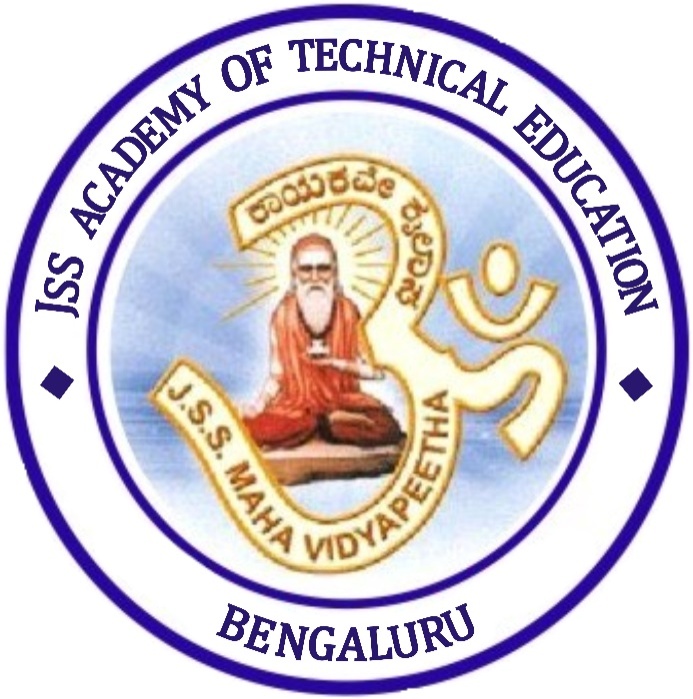
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Computer Graphics Laboratory Mini Project

SYNOPSIS

Topic: Chemical Reaction Animation

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Introduction

This is a Computer Graphics project about the animation of a chemical reaction. This allows the user to view a few chemical reactions that occur in our daily life. This lets the user view the reactions and how the bond(covalent bond or electron bond) is created between different elements.

Motivation

We decided to initiate an innovative approach to making different perspectives of various chemical reactions. We came up with this project because this helps in perceiving various chemical reactions in 3-Dimensional space as imagining that is a tedious and confusing process being a human being. We wanted to depict real life chemical reactions as well as scenarios.

The major reason behind us designing this project was we wanted to design a learning space, but couldn’t do so as the process of perceiving real world chemical reactions was complex and confusing on a conceptual level. So with this system we plan on making it easier for everyone including students to find a solution to their visualising problem and understand chemical reactions on a better scale.

Objectives

* Depict real life chemical reaction.
* Simulate how different reactions occur with different number of free electrons.
* Plot complex elements with multiple views and kinds of reactivity.
* To show the feats achievable with OpenGL.

Descriptions

For this project we are using OpenGL as the application program interface. This simple project is based on the controlling the opaqueness, orientation, lighting of certain elements in a chemical reaction present on the screen along with their properties. This simple C program shows how the transparency of the certain selected object can be decreased or increased by the percentage of opaqueness or how the colours may vary during different chemical reactions.

There would be an introduction main-screen, upon which it will be directed to the screen containing the various options and scenarios. OpenGL (Open Graphics Library) is a cross platform, hardware-accelerated, language-independent, industrial standard API for producing 3D graphics. Modern computers have a dedicated GPU (Graphics Processing Unit) with its own memory to speed up graphics rendering.

Expected Outcomes

This program will render simple chemical reactions using OpenGL. It will change the position as well as orientation of elements after a chemical reaction. With the help various input/output devices the user can check the possibility of chemical reactions of different available elements. Portray shadow effects of objects under different chemical combinations.