

DECLARATION

I do declare that the seminar work entitled “**Molecular Electronics**” submitted by me in the Department of Electronics and Communication Engineering, JNTUH College of Engineering, Sultanpur in partial fulfillment of degree for the award of Bachelor of Technology in Electronics and Communication Engineering is a bonafide work, which was carried out under the supervision of **Sri. B. Prabhakar**, Associate Professor and Head, Department of ECE, JNTUHCES.

Also, I declare that the matter embedded in this report has not been submitted by me in full or partial thereof for the award of any degree/diploma of any other University or Institution previously.

Place:

Signature of the Student

Date:

(CH. SUMANTH)

ACKNOWLEDGEMENT

Apart from my effort, the success of this seminar largely depends on the encouragement and guidance of many others. I take this opportunity to express my gratitude to the people who have helped me in the successful completion of this seminar.

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ABSTRACT

Molecular electronics (sometimes called moletronics) is an interdisciplinary theme that spans physics, chemistry, and materials science. The unifying feature of this area is the use of molecular building blocks for the fabrication of electronic components, both passive (e.g. resistive wires) and active (e.g. transistors). The concept of molecular electronics has aroused much excitement both in science fiction and among scientists due to the prospect of size reduction in electronics offered by molecular-level control of properties. Molecular electronics provides a means to extend Moore's Law beyond the foreseen limits of small-scale conventional silicon integrated circuits.

Molecular electronics, one of the major fields of current efforts in nanoscience, involves the exploration of the electronic level structure, response and transport, together with the development of electronic devices and applications that depend on the properties of matter at the molecular scale. This includes single molecules, molecular arrays and molecular networks connected to other electronic components.