

**TITLE** : Design Full Wave Precision Rectifier Circuit using Op-Amp

**STUDENT NAME** : Saravanakumar M

**COLLEGE NAME** : Sri Eshwar College of Engineering, Coimbatore.

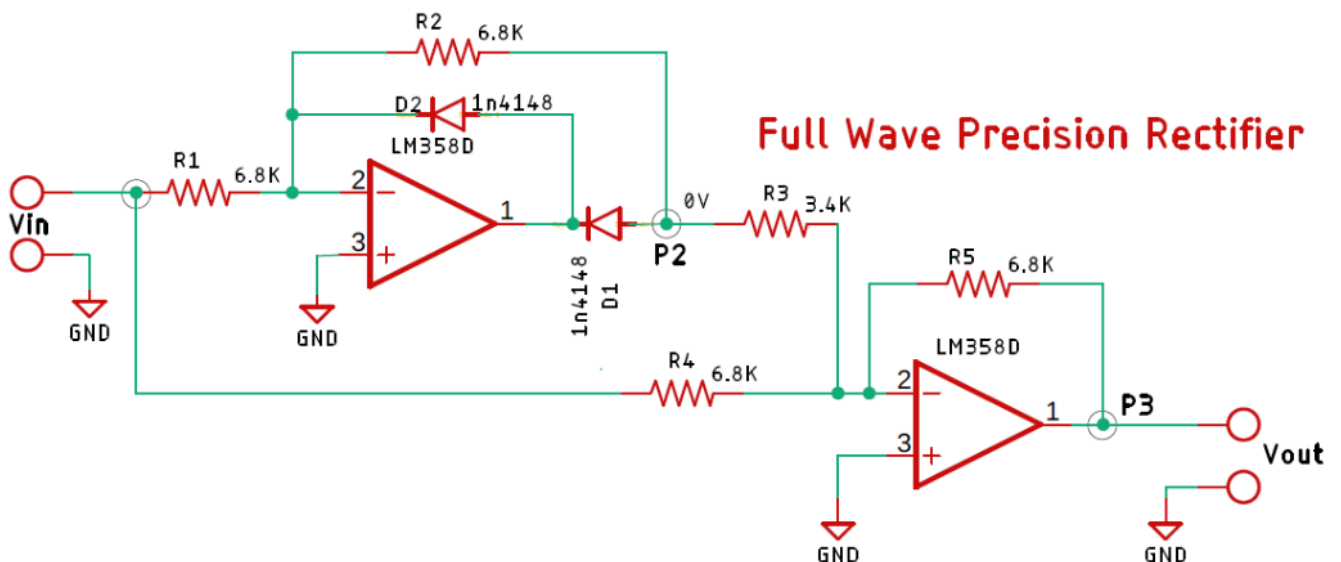
### PROBLEM STATEMENT:

Traditional diode-based rectifiers suffer from voltage drop issues, making them unsuitable for low-voltage signal processing. This project aims to design and implement a Full-Wave Precision Rectifier using an Op-Amp to achieve accurate rectification without signal distortion. The circuit will be simulated in eSim to validate its performance before real-world application.

### ABSTRACT:

Rectification is a crucial process in electronic circuits, especially in signal processing and measurement applications. Traditional diode-based rectifiers introduce a voltage drop, leading to inaccuracies in low-voltage signal rectification. To overcome this limitation, this project focuses on the design and implementation of a Full-Wave Precision Rectifier using an Op-Amp. The circuit ensures accurate rectification of both positive and negative halves of an AC signal without the diode voltage drop issue. The design will be simulated using eSim, an open-source EDA tool, to verify its performance before real-world implementation. This precision rectifier is ideal for applications requiring accurate signal processing, such as audio processing, instrumentation, and biomedical applications.

### PROPOSED CIRCUIT:



### SOURCE/REFERENCE(S):

1. TOUMAZOU C., LIDGEY F. J., CHATTONG S :High frequency current conveyor precision full-wave rectifier. IEE 1994, Electronics Letters Online No: 19940539.
2. <https://circuitdigest.com/electronic-circuits/half-wave-and-full-wave-precision-rectifier-circuit-using-op-amp>