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Abstract
First we appraise variant isolation amplifiers which are applied now, then describe a new constitution by own design.

Traditional operational amplifiers belong to the voltage source-controlled components, their bandwidths are limited and thus they have poor high frequency response. The current conveyors belong to current source controlled components, they have some excellent characteristics such as wide bandwidth, high slew rate, low noise, low drift and low distortion. Based on those properties mentioned above, the current conveyors are selected in our study.

In this paper, the dual-channel optocoupler and current conveyors are employed to achieve the wide bandwidth isolation amplifier. The high gain feedback technique and pole-zero compensation are applied to overcome the inherent nonlinear characteristics of optocoupler and to obtain a good transient response. Its bandwidth is up to 563 kHz and the output response exhibits linear transfer characteristics. The mathematical model of proposed isolation amplifier is also derived and discussed. Experimental and simulation results are compared to verify the validity of this mathematical model. The dynamic and static characteristics are also demonstrated with experimental results. These properties mentioned above are an important issue for the design of isolation amplifier.

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