TITLE: A single-ended primary-inductor converter (SEPIC)

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PROBLEM STATEMENT:

"The objective is to design and develop a Single-Ended Primary Inductor Converter (SEPIC), a versatile DC-DC converter capable of both stepping up and stepping down the input voltage to provide a regulated output voltage. The system should operate efficiently under varying input voltage conditions, ensuring stable performance for a wide range of load requirements. The converter must maintain low output voltage ripple, high efficiency, and reliability while meeting the desired input and output voltage ranges. It is intended for applications such as renewable energy systems, battery-powered devices, or any system requiring flexible voltage regulation in compact and efficient power electronics design.".

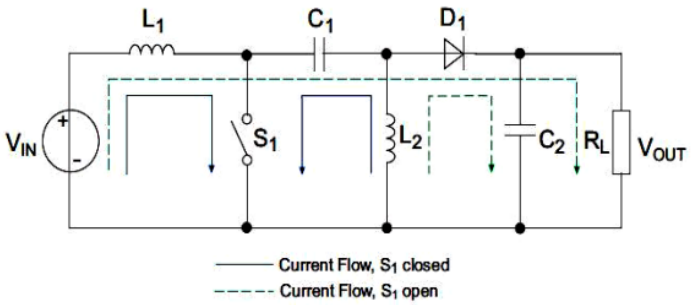

Figure 1 circuit diagram of SEPIC Converter

TITLE OF THE PAPER: Performance of Closed Loop SEPIC Converter with DC-DC Converter for Solar Energy System

REFERENCE:

[1] S. S. Martin, A. Chebak and N. Barka, "Development of renewable energy laboratory based on integration of wind, solar and biodiesel energies through a virtual and physical environment," 2015 3rd International Renewable and Sustainable Energy Conference, Marrakech, 2015, pp. 1-8.

[2] Y. Mahmoud, W. Xiao, and H. H. Zeineldin, “A simple approach to modeling and simulation of photovoltaic modules,” IEEE Trans. Sustain. Energy, vol. 3, no. 1, Jan. 2012, pp. 185–186.