

Abstract

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Analog Electric Circuits Synthesis using a Genetic Algorithm Approach

Evolvable hardware is a hardware that depends on evolutionary algorithms (EAs) for performing electrical circuit synthesis and evolving its electrical circuit architecture, furthermore it depends on EAs for making the necessary adaptations to this architecture while working on line. This paper presents a new approach for solving the electrical circuit synthesis problem using genetic algorithms as an automated design technique, the proposed approach offers a new coding style for the chromosome representing the electric circuit, and also minimizes the chromosome size in an attempt to solve the scalability problem associated with evolvable hardware. This approach is tested upon the synthesis of low pass electrical filter and has proved to be efficient and capable of handling more complex circuit design tasks with minor future changes.