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Overview of the technology behind hybrid excitation synchronous machines

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Abstract **–** The objective of this paper is to present a comprehensive analysis of hybrid excitation synchronous machines, including an examination of various structures found in scientific and technical literature, along with their advantages and drawbacks. Additionally, different methods of classification for these structures will be explored. The paper also delves into the contributions of the hybrid excitation principle for both motoring and generating modes and provides an overview of various models used in designing these structures.

Keywords – Hybrid Excitation, Permanent Magnet Machines, Design Of Electric Machines, The Flux Weakening Region