



(54) **PHASE CURRENT BALANCING FOR MULTIPHASE COUPLED INDUCTOR CONVERTER**

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(57) **ABSTRACT**  
  
This disclosure describes systems, methods, and apparatus for reducing current imbalances between phases in a multi-phase converter as well as reducing instances of particular phases switching twice within a single pulse-width modulated cycle, or other time period. Phases that have not switched for a longest period of time can be compared to see if swapping their firing patterns would reduce current imbalances, and if so, then those firing patterns can be swapped.

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graph LR; 102[Input Power / Control Signal 102] --> 105[Power Supply 105]; subgraph 105; 106[Converter 106]; end; 105 -- "Output Power" --> 110[Match Network 110]; 110 --> 115[Plasma Processing Chamber 115];
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