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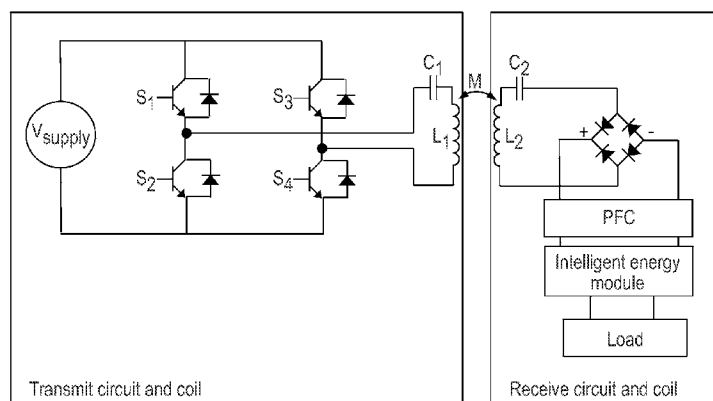
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- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
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- (54) **Title:** NONLINEAR SYSTEM IDENTIFICATION FOR OPTIMIZATION OF WIRELESS POWER TRANSFER



- (57) **Abstract:** A method of detecting whether a receiver coil is near a transmit coil in a wireless power transfer system (WPTS), the method involving: applying a pseudo-random signal to the transmit coil; while the pseudo-random signal is being applied to the transmit coil, recording one or more signals produced within the WPTS in response to the applied pseudo-random signal; by using the one or more recorded signals, generating a dynamic system model for some aspect of the WPTS; and using the generated dynamic system model in combination with stored training data to determine whether an object having characteristics distinguishing the object as a receiver coil is near the transmit coil.