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Contactless Power Transfer for Through-Bore Structures - A Study of Rotary Transformers and Capacitors as Probable Avenues

Contact slip rings have inherent characteristics, e.g. contact wear, that hinder their performance. Alternatives include is the use of inductive or capacitive energy storage for contactless power transfer. We investigated the capacitor as an alternative to the standard inductive type contactless slip rings. The resultant prototype system achieves rotary capacitive power transfer at a system efficiency of 17%.

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