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# **Development of Traction System with Six Phase Induction Motor for Urban Passenger Vehicle**

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## **Abstract**

The paper deals with six-phase traction systems for urban electric passenger vehicles. The general structure of a trolleybus/bus driven by a six-phase induction motor with symmetrical phase distribution is designed. A new form of presentation of the multiphase space vector is proposed, based on which the orthogonal model of the six-phase induction motor was developed. The vector control algorithm of the six-phase traction system with Fuzzy trolleybus speed controller has been developed. Comparative simulations with the equivalent three-phase machine showed the increased starting and operating capacity of the six-phase induction traction motors, including breaking one/two/three phases, but the adequate performance of the control system.