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DESIGN OF THE ELECTRIC MOTOR WITH PERMANENT MAGNETS FOR ELECTRIC VEHICLE ACCORDING THE DRIVING CYCLE

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The results of modeling a permanent magnet motor are given, which can be used instead of an internal combustion engine for mini cars. The dimensions of the magnetic system of the electric motor and the values of the electromagnetic torque are determined, taking into account the mass and dimensions parameters of the electric vehicle and the European driving cycle. The optimal thickness of the magnets is determined, at which the specified value of the electromagnetic moment is ensured, as well as the optimum performance of the circulation pump, at which a given current density and optimal liquid cooling are provided. All calculations are performed in MotorSolve and Magnet, provided by Infolytica. References 4, figures 6.

Key words: electric motor with permanent magnets, driving cycle, optimal geometry of the rotor.

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