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Title

IN-WHEEL DIRECT DRIVE ELECTRIC MACHINE FOR RAILWAY TRANSPORTATION VEHICLES

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Short presentation

The invention presents an electric propulsion machine, with permanent magnets and axial flux, consisting of a stator mounted on a fixed shaft and a rotor consisting of permanent magnets mounted on a ferromagnetic part attached to the wheel of the vehicle. The ferromagnetic piece has a dual functional role: mechanical and rotor yoke. The wheel consists of a main steel piece **1**, elastic (rubber) element **2**, steel wheel rim **3** and a clamping ring **7**. The wheel is mounted on a fixed axle **5** by means of a radial-axial bearing **4**, intended for the railway sector, in classic construction, with spacer rings and covers mechanically fixed with screws, which allows the rotational movement and the radial and axial fixing of the metal wheel. The electric propulsion machine consists of a stator having a stator magnetic core **8**, made of circumferentially overlapping sheets in which grooves are milled, a winding **12**, mounted in the grooves of the stator magnetic core **8**, a stator mounting support **9**, an end flange on the axle **10**, a rotor consisting of permanent magnets **13** and the clamping ring **7**, which has ferromagnetic properties, an outer casing **11** made of aluminum, for better cooling, and rotation sleeve (semering) **6** with the role of eliminating the contamination of the electric machine with dust, water, etc.

Applicability

Propulsion of electric railway vehicles

Images