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## THE EQUIVALENT CIRCUIT OF A SPECIALLY DESIGNED INDUCTION MOTOR OF A DRIVE SYSTEM FOR POLYMERIZATION REACTOR

**ABSTRACT** *The way of consideration of a loss in large-size slide bearing on the basis of the idle current measurements is presented in the paper. The motor is not loaded by mixer of polymerization reactor. A large-size slide bearing cooled with polyethylene stream in polymerization reactor chamber or a rolling bearing is taken into consideration. A system of equations allowing for determination of the rotor current and electromagnetic torque on the basis of measurements is presented. The electromagnetic torque is equal to the torque occurring in the large-size slide bearing. Results of measurements of the stator current during operation of the motor in polymerization reactor and measurements carried out at a testing station are presented.*

*A bearing set with thrust-rolling bearing was included in the motor.*

**Keywords:** *specially designed motors, equivalent circuits, polymerization reactors, slide bearings.*