

## Streszczenie rozprawy w języku angielskim

Title:

**The impact of various geometric surface structure of the diesel engine cylinder liner on the course and effects of the working process**

Abstract:

This doctoral thesis explores the influence of texturing and the size of the textured area on the cast iron cylinder liner of a diesel engine on the course and effects of the engine's working process. Comparative studies were conducted on an engine dynamometer using a research engine SB.31.CR. The engine was successively equipped with a factory cylinder liner, a liner with a narrow textured area, and a liner with a wide textured area. Surface texturing was performed using a mechanical dimpling method. Emissions of hydrocarbons, soot, and fuel consumption were measured across a wide range of engine loads and speeds. The engine equipped with textured liners showed improved characteristics in terms of hydrocarbon emissions. The liner with a wide textured area proved to be the most advantageous. The engine with the factory liner and the engine with the liner with a wide textured area achieved comparable specific fuel consumption. Slightly higher fuel consumption was observed in the engine with the liner with a narrow textured area.