

螺杆挤压式生物质成型机优化设计与试验 Optimal Design and Experiment of Screw Briquetting Biomass Fuel Machine

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摘要: 在对螺杆挤压式生物质成型机成型物料的受力及运动进行分析的基础上, 将整体螺杆分拆为螺杆头和螺杆主体, 将成型套筒拆分为成型活套和保型套筒, 对成型机螺杆头部的的设计参数螺旋体叶片直径 D 、叶片螺距 S 、螺旋轴直径 d 和套筒数据进行优化设计。试验表明, 通过更换螺杆头和成型活套能够降低磨损, 螺杆头和螺杆主体的使用寿命可达到90 h和1000 h, 提高了生物质成型燃料的生产量, 生产效率与原成型机相比提高了66.12 kg/h, 从而促进生物质成型机的推广应用。 Based on the analysis on the force and movement of biomass materials extruded by screw molding machine, disassembling the whole screw into the screw head and the main screw body, the molding sleeve into forming looper and Paul-type sleeve, and optimal design of the parameter of screw head which contains spiral leaves diameter D , blade pitch S , screw shaft diameter d , and the sleeve data was carried out. The tests showed that changing the screw head and forming looper was able to reduce the wear, the service life of the screw head and the main screw body was up to 90 h and 1 000 h respectively, biomass briquette production was increased, production efficiency compared with the original machine increased 66.12 kg / h. The optimal design promoted the applications of biomass briquetting machine.

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