

Patent Technology Review of Eucommia Ulmoides Gum

LIAO Yang

(Patent Examination Cooperation Jiangsu Center of the Patent Office, China National Intellectual Property Administration, Suzhou 215011, China)

Abstract: In this paper, the trend of the patent application, the applicants and the technical situation of the patents in the field of eucommia ulmoides gum (EUG) were analyzed. Most of the early applications for EUG patents were from foreign companies, but most of the patents had expired. Relying on the rich resources of eucommia ulmoides in China, EUG research in China was relatively active, and mainly concentrated in universities and enterprises focusing on eucommia ulmoides industry, as well as some automobile enterprises. The research on EUG was mainly concentrated in chemical structure modification and industrial application. The foreign technical barriers in the EUG field were relatively low. It was recommended that domestic enterprises and universities strengthen cooperation and complement each other in the eucommia ulmoides planting and extraction, EUG modification and application and other aspects to form an industrial chain.

Key words: eucommia ulmoides gum; patent; composite; modification

科技部公示《国家绿色低碳先进技术成果目录》

为了推动科技成果转化和产业化应用,加速绿色低碳技术升级,科技部遴选出绿色低碳先进技术成果并进行了公示。

《国家绿色低碳先进技术成果目录》(以下简称《目录》)包括6个领域87项技术成果。

(1) 水污染治理领域技术成果18项,涉及城镇生活污水高效处理及资源化、城镇污水处理厂精细化运行、农村生活污水处理、工业废水处理、水环境综合整治等。

(2) 大气污染治理领域技术成果15项,涉及工业烟气除尘脱硫脱硝及多污染物协同控制、重点行业挥发性有机物(VOCs)污染防治及回收、移动源污染控制等。

(3) 固体废物处理处置及资源化领域技术成果23项,涉及有机固体废物、生活垃圾、危险废物、大宗工业固体废物、电子废物的处理处置及资源化。

(4) 土壤和生态修复领域技术成果12项,涉及污染地块、工矿用地的土壤修复及脆弱生态环境生态修复等。

(5) 环境监测与监控领域技术成果6项,涉及生态环境质量、污染源和环境应急监测与监控等。

(6) 节能减排与低碳领域技术成果13项,涉及

用能设备节能降碳、工艺改造节能减排、余热余压节能低碳、煤炭高效清洁利用等。

橡胶行业中,“废旧轮胎(橡胶)智能化裂解与炭黑深加工成套设备”技术入选《目录》。

该技术采用低温常压/微负压连续裂解工艺,破碎后的废旧轮胎经裂解生成裂解油、炭渣、钢丝和可燃气,炭渣经磁选、研磨、改性、造粒、包装后获得高品质炭黑产品。裂解工艺采用模块化设计,炭黑输送采用智能化的密闭式气力输送系统,实现高效率、洁净化、智能化生产。技术配套了智能化运行管控系统。连续裂解生产线年处理废旧轮胎能力大于2万t,每吨废旧轮胎处理能耗小于75 kW·h;热解炭黑深加工设备单机年处理能力大于7 000 t。

裂解炭黑产品:细粉含量 $\leq 10\%$, 加热减量 $\leq 2\%$, 炭黑吸油值(DBP) $\geq 60 \text{ cm}^3 \cdot (100 \text{ g})^{-1}$, 拉伸强度 $\geq 18.0 \text{ MPa}$ 。尾气排放达到GB 31571—2015《石油化学工业污染物排放标准》、GB 14554—1993《恶臭污染物排放标准》等要求。在生产环节,与炭黑、油、钢丝的传统生产过程相比,裂解处理1 t废旧轮胎可减少约1.1 t二氧化碳排放。

(本刊编辑部)