

## 外语能力：

### 4、 外语能力证书

报告编号：(2024) SWFU012394

## 论文收录/引用检索报告

项目名称：中国环境科学研究院/西南林业大学吉江林发表论  
文被 SCI 收录、期刊影响因子及中科院 JCR 分区情况

委 托 人：吉江林

委托日期：2024 年 04 月 01 日

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一、项目的技术要求

中国环境科学研究院/西南林业大学吉江林发表论文被 SCI 收录、期刊影响因子及中科院分区情况

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二、情报检索情况:

1. 检索数据库: Science Citation Index Expanded (SCI-E) 网络版  
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2. 检索式: 略

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|-------------|-----------|----------|------|--------|
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## 四、检索结论

依照用户委托，通过国际联机数据库检索，具体结果如下：

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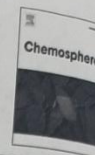
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## Estimation of typical agricultural machinery emissions in China: Real-world emission factors and inventories

Jianglin Ji<sup>a,b,c,d,1</sup>, Hefeng Zhang<sup>a,b,1</sup>, Di Peng<sup>a,b</sup>, Mingliang Fu<sup>a,b,\*</sup>, Chao He<sup>c,d</sup>, Fei Yi<sup>a,b</sup>, Hang Yin<sup>a,b,\*</sup>, Yan Ding<sup>a,b</sup>

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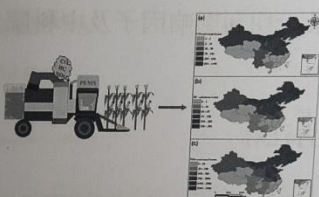
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### HIGHLIGHTS

- The 8-mode testing cycle was unable to reflect actual engine performances.
- NO<sub>x</sub> emission factors were higher than those of national inventory guideline.
- Emission inventory based on harvesting area of corn combine harvester was established.
- Emissions of corn combine harvesters in China mainly occur from June to October.

### GRAPHICAL ABSTRACT



### ARTICLE INFO

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### 1. Introduction

Characterized by a high engine power and low fuel consumption, diesel engines have been widely applied in agricultural machinery (Liu et al., 2020; Wang et al., 2019; Triantafyllopoulos et al., 2019).

According to the 2020 China Agricultural Machinery Industry Yearbook, as of 2019, the total mechanical power of agricultural machinery in China reached 1027.6 million kW, of which diesel engine power accounted for 77.6%. The 2019 China Mobile Source Environmental Management Annual Report revealed that in 2018, the nitrogen oxide (NO<sub>x</sub>) emissions

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## 法规工况下轻型汽油车氨排放特征

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**摘要:**为掌握轻型汽油车NH<sub>3</sub>排放实际情况,以一辆配备三元催化转化器(three-way catalytic converter, TWC)的国VI轻型汽油车为研究对象,分别在全世界轻型汽车驾驶工况(worldwide light-duty test cycle, WLTC)、中国轻型汽车行驶工况(China light-duty vehicle test cycle, CLTC)和美国联邦测试规程(federal test procedure, FTP-75)下进行NH<sub>3</sub>排放测试,分析WLTC工况下的瞬时NH<sub>3</sub>排放特征,以及不同环境温度(-7、0、23、35℃)对NH<sub>3</sub>排放的影响,并对比3种测试工况下的NH<sub>3</sub>排放因子。结果表明:①在WLTC工况下,车辆冷启动前50s未检测到NH<sub>3</sub>,NH<sub>3</sub>排放主要集中在低速段和中速段(前900s),在高速段和超高速段,仅有极少量的NH<sub>3</sub>生成。轻型汽油车在低速(v<40 km/h)的加速区间内,NH<sub>3</sub>排放量较高。②随着环境温度的升高,NH<sub>3</sub>排放因子呈下降趋势,35℃时略微有所上升。其中,-7℃下低速段的NH<sub>3</sub>排放因子分别是0、23和35℃下的1.4~2.2倍;在WLTC工况下,各种测试环境温度下车辆的NH<sub>3</sub>排放因子均表现为低速段>中速段>高速段>超高速段;在3种工况下,轻型汽油车的NH<sub>3</sub>排放因子差异较大。其中,测试车辆在WLTC工况下的排放因子最小。研究显示,在低温(-7℃)环境下轻型汽油车NH<sub>3</sub>的排放量相对较高。

**关键词:** 轻型汽油车;三元催化转化器;NH<sub>3</sub>排放因子;环境温度;测试工况

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## Ammonia Emission Characteristics for the Light-Duty Gasoline Vehicle under Regulatory Cycles

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**Abstract:** In order to understand the current status of NH<sub>3</sub> emissions from light-duty gasoline vehicles, NH<sub>3</sub> emissions from a China 6 light-duty gasoline vehicle equipped with a three-way catalytic converter (TWC) were tested under three test cycles, respectively, including worldwide light-duty test cycle (WLTC), China light-duty vehicle test cycle (CLTC), and federal test procedure (FTP-75) operating cycles. Instantaneous NH<sub>3</sub> emission characteristics and the impact of different ambient temperatures (-7, 0, 23, 35 °C) to NH<sub>3</sub> emissions under WLTC cycle were analyzed, moreover, the NH<sub>3</sub> emission factors under three test cycles were also compared. The results showed that no NH<sub>3</sub> emission was observed during the first 50 s of the cold start under WLTC cycle. NH<sub>3</sub> emissions were concentrated primarily in the low speed and medium speed phase (first 900 s), while few NH<sub>3</sub> emissions occurred in the high speed and ultra-high speed phase. Light-

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