IEA-Advanced Motor Fuels
ANNUAL REPORT 2024

Task 62

Technology Collaboration Programme
by iea

Task 62: Wear in Engines Using Alternative Fuels

Project Duration	January 2022–June 2024
Participants **Task sharing** **Cost sharing**	China, Denmark, Finland, Germany
Total Budget	In-kind contributions corresponding to > EUR 150,000 (USD 162,000)
Task Manager	Jesper Schramm DTU (Technical University of Denmark) Email: jessc@dtu.dk
Website	https://iea-amf.org/content/projects/map_projects/62

Purpose, Objectives, and Key Question

Alternative fuels have been intensively introduced in transportation sectors in recent years. While some of the wear caused by these fuels can be seen initially, the problems really become clear after years of application. The goal of this task was to identify and present an overview of potential wear issues to prevent major surprises in the future.

The Task evaluated excess wear in internal combustion engines caused by the use of alternative fuels. The objectives were to review ongoing related projects in the member countries and conduct a general literature review to evaluate engine wear problems that can be foreseen with future application of alternative fuels.

The key questions to be addressed were as follows:

- How severe are the problems associated with use of alternative fuels?
- What is the expected increase in engine wear caused by these fuels?
- What can be done to solve these problems?

Activities

General literature review

The Task involved a general literature review for alternative fuels, focusing on those relevant to ongoing studies related to engine applications in the countries involved in the task: methanol, ammonia, and bio-oils, among others.

In the literature review, the Task members compiled the available information and reported it in a structured way that supports future application of alternative fuels.

On-line seminars

Activities related to engine wear are ongoing in the involved AMF countries. These studies have been communicated through presentations from the responsible “activity” persons (or other designated people) at frequent seminars. The results from the seminars provided a background for the literature review report.

Key Findings

The results were published in a report that was delivered at the end of the project period. In addition, the results were published at international conferences and journals.

Main Conclusions

The project results identified and added to the understanding of the high degrees of wear caused by use of alternative fuels in engines used in the transportation sector.

Publications

Task 62: Wear in Engines Using Alternative Fuels. Main report edited by Jesper Schramm

Task 62: Wear in Engines Using Alternative Fuels. Wear associated with application of methanol in combustion engines - Chinese experiences edited by Wei Anli

Task 62: Wear in Engines Using Alternative Fuels. The influence of fuel H/C ratio on engine wear Denmark: Rune WK Christensen, Jesper Schramm Germany: Fanny Langschwager, Ulrike Schuemann, Bert Buchholz