



University of Banja Luka
Faculty of Mechanical Engineering
Faculty of Electrical Engineering



DEMI 2015

**12. International Conference on Accomplishments in
Electrical and Mechanical Engineering
and Information Technology**

PROCEEDINGS

Banja Luka, 29th - 30th May 2015

CIP - Каталогизација у публикацији
Народна и универзитетска библиотека
Републике Српске, Бања Лука

621.3(082)(0.034.2)
621(082)(0.034.2)
004(082)(0.034.2)

INTERNATIONAL conference on accomplishments in Electrical and
Mechanical Engineering and Information Technology (12 ; Banja Luka)
(2015)

Proceedings [Elektronski izvor] = Zbornik radova / 12th
International conference on accomplishments in Electrical and
Mechanical Engineering and Information Technology, Banja Luka, May
2015 ; [editor in chief Vid Jovišević]. - Banja Luka : University of Banja
Luka, Faculty of Mechanical Engineering = Univerzitet u Banjoj Luci,
Mašinski fakultet, 2015 (Laktaši : Grafomark). - 1 elektronski optički disk
(CD-ROM) : tekst, slika ; 12 cm

CD ROM čitač. - Nasl. sa nasl. ekrana. - Bibliografija uz svaki rad.

ISBN 978-99938-39-53-8

COBISS.RS-ID 5049624

University of Banja Luka
Faculty of Mechanical Engineering
Faculty Of Electrical Engineering

PROCEEDINGS

ZBORNİK RADOVA

Banja Luka, May 2015

Print:
Grafomark, Laktaši

Circulation:
200

ISBN:

**12TH INTERNATIONAL CONFERENCE ON ACCOMPLISHMENTS
IN ELECTRICAL AND MECHANICAL ENGINEERING AND
INFORMATION TECHNOLOGY**

Supported by:

MINISTRY OF SCIENCE AND TECHNOLOGY OF
THE REPUBLIC OF SRPSKA

Organizer and publisher:

FACULTY OF MECHANICAL ENGINEERING
UNIVERSITY OF BANJA LUKA

Co-organizer:

FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITY OF BANJA LUKA

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APPLICATION OF BIOMETHANE IN PROPULSION AND MOBILE SYSTEMS

Saša Milojević¹, Radivoje Pešić²

Summary: Human activities, in particular transport, are partially responsible for the problems associated with the greenhouse effect, and therefore global warming. The European Union is increasingly dependent on imported fossil fuel. From the second side, oil products come from politically unstable regions, oil prices are rising and resources are limited. This complex situation leads to significant ecological and economical risks for society. The European Commission is seeking to solve these issues through a series of initiatives, including many that focus on the transport, which is almost fully dependent on oil. In this context, it has launched every time a calls for projects that focus on biofuels. Our research inside of the paper is redirected on the training to take action with similar projects. We are analyzed here the possibilities for production of biogas from landfill and agricultural crops. By upgrading biogas to bio-methane we produce the high quality fuel for mobility systems causing lower exhaust emission specifically particulate matter, sulfur compounds, non-methane hydrocarbons and nitrogen oxide, as well as smog and noise pollution in the atmosphere.

Key words: Global warming, Transport, Biomethane.

1. INTRODUCTION

From the vehicles are required to meet increasingly stringent regulations for emissions of toxic and harmful products of combustion. By this route the European Commission the Directive 93/116/EC prescribed permissible total emissions of carbon dioxide (CO₂) to an average of 130 g·km⁻¹ for all newly produced passenger cars (vehicle category M1) starting from 2015, and 95 g·km⁻¹ from 2020. From 2012 to 2018, the penalties are €5 per vehicle for the first g·km⁻¹ of CO₂; €15 for the second gram; €25 for the third gram; €95 from the fourth gram onwards. From 2019, manufacturers will pay €95 for each g·km⁻¹ exceeding the target [1,2].

The regulation is applicable also to vehicles category N₁ with a reference mass not exceeding 2610 kg. Light Commercial Vehicles (LCVs) must meet the following emission targets:

- 2017: The legislation for vans introduced a fleet-average CO₂ emission target of 175 g·km⁻¹ fully phased-in by 2017.

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