COVER LETTER

to Prof. Alexandru Salceanu

Guest Editor of the Special Issue of Acta IMEKO

29th March 2018

Dear Prof. Salceanu,

We are honored to be invited to submit our extended manuscript to the Special Issue of Acta IMEKO. We are sending herewith a copy of our manuscript. The contribution is entitled:

Heating an electric car with a biofuel operated heater during winter – installation, application and test

by

Christian Riess, Michael Simon Josef Walter, Stefan Weiherer,
Tiffany Haas, Sebastian Haas, Alexandru Salceanu

ABSTRACT
The automotive industry is currently undergoing major changes. Automobile manufacturers are conducting intensive research into alternative drive systems such as electric powertrains. If batteries of electric cars are charged with regenerative generated electricity, their emission output is zero with a well-to-wheel view. Furthermore, electric drives convince by their very high efficiency. At cold temperatures, however, the battery power drops due to energy-intensive loads such as the heating of the passenger compartment and in consequence dramatically reduces the range. Therefore, the focus of this research work is on external energy supply for the required heat capacity. The auxiliary energy may be generated by renewable energy technologies in order to further improve the CO2 balance of electric vehicles. The paper deals with the installation, application and test of a biofuel operated heater to heat the passenger compartment of a battery-powered electric car (Renault ZOE R240). The practical use of the heating system is analyzed in several test drives, performed during winter 2018. The gained results as well as the range extension of the electric car that can be achieved by substituting the on-board-heating-system by the fuel-operated-heater is finally quantified.

Please find in the following a list of modifications and improvements of the paper:

- More detailed orientation towards the research question and work that has been carried out since the conference during the winter 2017/2018.
- Extension of the conference paper (which was a review on the current state of the art) with detailed description of the installation and application of the fuel operated heating system in the research vehicle (technical and legal aspects) (covers now about 50% of the paper)
- Description of the experimental procedure and the test drives
- Discussion of the first test results and conclusion on further activities

Please address all correspondence concerning this manuscript to me at christian.riess@hs-ansbach.de.

Thank you for your consideration of this manuscript.

Sincerely,

your friends from Ansbach