



Serbian Tribology  
Society

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## THE GREEN AUTOMOBILE – DEFINITION AND REALIZATION –

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**Abstract:** *The green automobile has to be green from the cradle to the grave. This means that the life cycle assessment should be the required approach which means the environmental impact of raw material generation, of production, during use and of disposal and recycling have to be taken into account.*

*The overall aim is the reduction of energy as well as health and safety of the mankind. Nowadays the resources of energy carriers are consumed faster than expected.*

*The impacts mentioned above can be characterized by emissions, primary energy demand, consumption of resources and waste generation. Often these environmental impacts are evaluated as CO<sub>2</sub>-emissions, contribution to the greenhouse effect and summer smog and as primary energy demand during life cycle of all energy consumers.*

*Mostly these impacts are simplified to the contribution of lubricants by higher efficiency in powertrains, by longer lubricants lifetimes, by energy reductions during the production of automobiles and during their use. The last mentioned aspects mainly mean the reduced fuel consumption by reducing the friction between all moving parts.*

*Some of the aspects mentioned above are explained and evaluated in this presentation. As a result an overall energy reduction is possible.*

## THE ECO-LABEL AND THE CONFLICT BETWEEN BIODEGRADABILITY AND ENVIRONMENTALLY ACCEPTABILITY OF LUBRICANTS

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**Abstract:** *Often the environmental acceptability is equated with the fast biodegradability. But for the degradation process oxygen is necessary. If large amounts of lubricants will be introduced into the environment, for instance as an accident, so much oxygen has to be taken from the surrounding, that other organisms will suffer.*

*Nevertheless the regulations to define environmentally acceptable lubricants, which are listed in the framework to receive the European Eco-Label do not consider this aspect. The criteria for the Eco-Label include environmentally and human health hazards, aquatic toxicity requirements, biodegradability, exclusion of specific substances, the imperative use of renewable raw materials and of course the technical performance.*

*Details of these criteria will be explained in the presentation.*