CATALISTI
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Call for Interest (12/01/2021)

Project title: Di-electric fluids for electrical vehicles

Acronym: E-fluids

Project ID
Project specifications are to be determined based on the interest expressed following this call.

Project description

Introduction
The market growth rate of di-electric fluids or cooling fluids is expected to exceed double digits in the coming years in the key regional markets of North America, Europe and Asia, fueled by public concern regarding climate change and pollution, rising regulatory pressures, and technological innovation.

One of the biggest challenges for electric cars is the dissipation of the heat generated during the charge and discharge cycles of the lithium-ion battery. The direct immersion cooling system, where the battery cells are entirely immersed in a di-electric heat-transfer fluid, could be an alternative to the traditional battery cooling systems (air cooling, indirect liquid cooling). This new technology will allow car manufacturers to pack more energy into the cars' batteries, charge them faster, and extend battery life. Another essential consideration for immersion cooling is a reduction in environmental impact. The di-electric fluid used in immersion cooling is a fully biodegradable and non-toxic fluid that does not hamper battery recycling. Moreover, the di-electric fluid should be able to efficiently lubricate the car transmission, thus limiting the amount of additives and their impact on performance. As a dual purpose fluid, it will simplify the design and maintenance of next generation electrical vehicles.

Goals
This project aims to **develop renewable di-electric fluids for direct immersion cooling** and electrical vehicle powertrain. It will include the design of the di-electric fluid based on renewable raw materials, the formulation with appropriate additives, the fully characterization with a focus on the thermal, electrical and lubricant properties and the test of the cooling and the lubricant performances of these fluids in a cooling immersion system. We would like to build a partnership with a manufacturer of lubricants or additives and with an automotive or transmission manufacturer.

Call
Currently, a leading producer of oleochemicals has already expressed interest to design and produce ester-based fluids within the context of this collaborative research project.

To expand the consortium, the initiator of this project is searching for **a leading transmission manufacturer or a leading automotive manufacturer for testing the fluids, as well as a leading lubricant formulations manufacturer or a leading additive manufacturer to design fully formulated fluids.**

How to reply to this call
Please send an **email before 26 January 2020** to lfockaert@catalisti.be and **briefly describe your interest and potential contribution** to the project. Based on all offers, the current industrial partners together with Catalisti will determine which partners can join the consortium. After submission of your offer, you can be contacted by telephone to further elaborate your offer. Please contact catalyst Laura-Lynn Fockaert (lfockaert@catalisti.be, +32 476 37 97 64) if you have questions concerning this call.

Important notice: Partners that wish to participate in Catalisti-supported projects are required to be member of Catalisti. For more information on membership and membership fees, please visit our website (http://catalisti.be/membership-2/) or contact Laura-Lynn Fockaert.