Bollettino d'Ateneo

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Energia

PARTNER SEARCH PMI7-EU-BSGSME-8

01 dicembre 2017

Oggetto: PARTNER SEARCH PMI7-EU-BSGSME-8

Richiesta di impresa spagnola alla ricerca di partner italiani da includere in un loro progetto da presentare nel programma CAPACITIES tematica RICERCA PER LE PMI

Di seguito, una breve descrizione del progetto e le caratteristiche del partner richiesto.

Per informazioni sul progetto contattare tegas@apre.it facendo riferimento al codice PARTNER SEARCH PMI7-EU-BSGSME-8

------- PARTNER SEARCH PMI7-EU-BSGSME-8 --------

<Reference n.: PMI7-EU-BSGSME-8>
<Deadline: 04/09/2007>
<Programme: CAPACITIES>
<Project Title: G2T: GREENING GRINDING FOR TRANSPORT PRODUCTS>
<Financial Scheme: >
<Description: Brief Description:

Grinding process is widely used in many industrial machining processes mainly in automotive, aeronautical, capital goods sectors. It is a compulsory process to obtain the required accuracy but is a very dirty and high-energy consumption process. Nowadays in many of industrial applications more than 50%of occupied area and more than the 50 % of the consumed energy of a grinding machines is due to the coolant system. The project aims to reduce drastically either occupied area and the energy consumed by the coolant

system nearly by the 100%. The economic impact is relevant and the environmental consequences are drastically reduced.

Description:
.-Need:
Grinding is the most pollutant machining process. More than turning, milling or any other cutting process. But it is the best economical solution for high production and high precision and the only economical solution for several difficult to machining materials.
There are a lot of process where the only economical solution it is grinding..
The coolant fluid it is necessary in grinding. The flow of coolant in grinding can be until 1000 lts/min in creep feed applications, and from 25 to 150 lts/ min are very usual. The expected flow of coolant after the development of CAMEL project would be of 0,01 lts/min or less.
The occupied area by the coolant and filtration system it is the 50 % of total area and the energy consume by coolant and filtration system it is the most important representing the 50 % of total energy consumed by the whole system (Grinding machine +Coolant and filtration system). If the project results are satisfactory the energy consumed and area occupied by filtration system could be near of total elimination and pollution produced by liquid residues as well.

.- Innovation:
Within the CAMEL project a new grinding coolant concept named: OQC . "Optimal quantity coolant will be developed.

The idea it is to impact with oil spray in the wheel, so that, the oil goes inside the porous of the grinding wheel and after a very cool gas impacts the wheel. The oil is frozen and the porous are not empty: there are frozen oil or very cool oil adhered to the wheel grains.
When grinding, in the contact line between piece and wheel the oil is unfrozen and lubrication and cooling is performed in an optimal way.

.- Technical benefits expected
Drastic reduction of coolant nearly the 100%
Reduction of energy consumption in the whole system of 50%
Reduction in pollution by liquids residues until the 95 %

.- Economical benefits expected
Reduction in machining costs by the 20 %
Reduction in surface occupied by the whole system (machine + coolant and filtration system) of 50 %
Reduction in cost installation 25 %.

.- Other benefits expected
Environmental friendly process.
Fast replacement of new coolant system in case of failure.

Key Words: Grinding process, coolant system, energy consumption, pollution

<excerpt>

<Organisation Type: Impresa>
<Partner Sought: Required Experience
.- 1 SME: manufacturer of new lubricants
.- 1 SME manufacturer of grinding machines in automotive, railway, etc
sector

Profile of required organisations
2 SMEs END USERS not from Spain, Germany and Portugal

Number of partners required: 2