partners

contacts

PMV d.o.o.
Strahinj 140
4202 Naklo, Slovenia
Email: pmv @ pmv.si
Phone: +386 4 2013828
Fax: +386 4 2013829

BF-Department for Wood Science and Technology
Rozna dolina Cesta VIII/34
1000 Ljubljana, Slovenia
Email: info.les @ bf.uni-lj.si
Phone: +386 1 4231161
Fax: +386 1 2572297

Wood Industry Cluster
Dimiceva 13
1504 Ljubljana, Slovenia
Email: grozd @ sloles.com
Phone: +386 1 5898284
Fax: +386 1 5898100

E! 3558 EUREKA Elisa

Electro spindle with intelligent solutions and applications

The Project is funded by the EUREKA Programme.

The Project

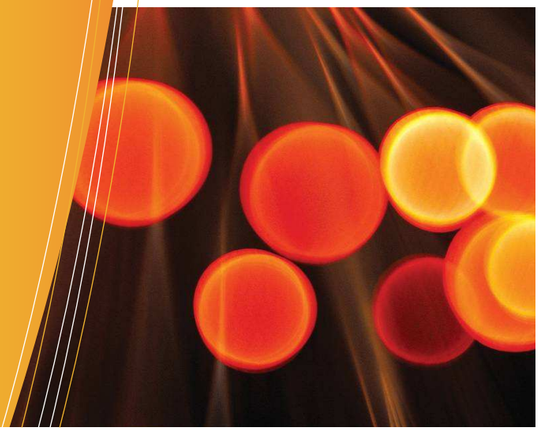
E13558 ELECTRO SPINDLE WITH INTELLIGENT SOLUTIONS AND APPLICATIONS

Increased industrial competition has driven the need for producers to reduce production costs and increase the product quality with implementation of the new innovative solutions.

One of the most important parts of the manufacturing processes based on the machining is machine tool performance. A lot of efforts to increase the machine tool performance have been provided. Unwanted vibrations are the major drawback to increase the material removal and quality of machined surfaces.

Relative vibrations between a cutting tool and work piece can result in quality of a machining process with surface location errors and time-varying tool load, which may excite the structural modes of a machine-tool system. In this manner new and innovative solutions are required in the field of machine tool performance. The essential parts of machines are tools and their performances, which are greatly depended from the tool-lock mechanism and spindle.

innovative solutions for quality machining



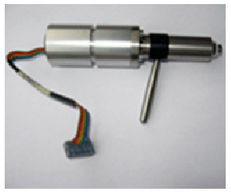
NEW GENERATION

The electro spindle concept has been developed from a single product to a complex system made of many specialized parts like engine, control units, roll ring, engine-spindle coupling, tool-lock systems, tool refrigeration system, quick tool changer, etc. This new and wide systemic vision implies a general review of design methodology of product/system in order to consider the new needs in terms of interface between components both on hardware/mechanical level and electronic / informatics one. **The new generation of electro spindles will be able to answer to most of the previous mentioned challenge with reference to four main guidelines: performance, reliability, easy of use and costs.**

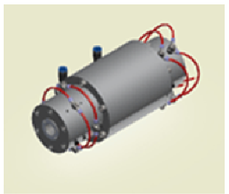
ELECTRO SPINDLES OPERATING ON VERY HIGH TURNS.

SOME OF DEVELOPED PROTOTYPES

High speed EC electro spindle operating at 60.000 rpm with 50 W of power, max.continuous torque 30,6 mNm and Pull off force > 300 N.



High speed AC electro spindle operating at 60.000 rpm with 11 kW of power and rated torque 1,8 Nm.



COMMERCIALIZATION

We are looking for a new industrial partners to commercialize developed prototyes. If you are interested in investment into further development of prototypes or you wish to take commercial role then please contact us.

INTERNATIONAL CHARACTER

Project Coordinator is ELKEDE from Greece. In the project collaborate 3 EU countries (Greece, Italy and Slovenia). Slovenian partners are; PMV d.o.o., University of Ljubljana and Wood Industry Cluster.

Project duration:
from 1.1.2008 to 31.12.2009.

WEB

http://www.sloles.com/EUREKA_Elisa/index.html.