STEERED ARC ION PLATING FOR THE DEVELOPMNET OF NEW TERNARY AND QUARTERNARY CERAMIC COATINGS FOR CUTTING AND FORMING TOOLS

Fact Sheet

Project Information

Grant agreement ID: RI1B0201

Project closed

Start date
1 April 1988

End date
31 March 1992

Funded under
Multiannual research and development programme (EEC) in the fields of basic technological research and the applications of new technologies (BRITE), 1985-1988

Total cost
No data

EU contribution
No data

Coordinated by
Gottlieb Gühring KG
Germany

Objective

In this project, the first development of (TiAl)N and (TiNb)N ternary coatings with the steered arc technique was achieved. Project partners found steered arc ion plating to

be a reliable and flexible technique for the development of new ternary and quaternary ceramic coatings for cutting and forming tools. It was also found that specific ceramic coatings can be used as substitutes for rare and expensive tool materials with a higher machining efficiency.
THREE PARTNERS JOIN HANDS TO DEVELOP AND TO EVALUATE THE POTENTIAL OF A NEW GENERATION OF CERAMIC COATINGS:
- GUEHRING IS A GERMAN TOOL MANUFACTURING COMPANY.
- HAUZER TECHNO COATING IS A DUTCH INDUSTRIAL COATING COMPANY.- THE DEPARTMENT OF METALLURGY AND MATERIALS ENGINEERING OF THE KATHOLIEKE UNIVERSITEIT LEUVEN IS A BELGIAN RESEARCH INSTITUTE ON THE CHARACTERIZATION OF STRUCTURAL AND FUNCTIONAL PROPERTIES OF COATED MATERIALS.

TIN COATINGS WERE INTRODUCED AS WEAR RESISTANT COATINGS ON TWIST DRILLS SOME 8 YEARS AGO. SIGNIFICANT PROGRESS IS NOW TO BE EXPECTED FROM THE DEVELOPMENT OF NEW CERAMIC TERNARY AND QUATERNARY COATINGS. A STRONG DEMAND FOR COATED TOOLS TO MACHINE NEW MATERIALS LIKE ALSI ALLOYS AND FIBER REINFORCED COMPOSITE MATERIALS HAS BEEN IDENTIFIED. THE THREE PARTNERS WILL COMBINE THEIR PRACTICAL AND THEORETICAL KNOW HOW TO EVALUATE AND FURTHER DEVELOP THE POTENTIAL OF THE FLEXIBLE STEERED ARC METHOD TO MANUFACTURE WEAR RESISTANT TERNARY AND QUATERNARY CERAMIC COATINGS ON TOOLS. THE SUCCESSFUL COMPLETION OF THIS RESEARCH EFFORT WILL SERIOUSLY STRENGTHEN THE EEC POSITION IN THE RAPIDLY GROWING FIELD OF HARD PHYSICAL VAPOUR DEPOSITED (PVD) COATINGS.

Fields of science (EuroSciVoc)

engineering and technology > materials engineering > **fibers**

engineering and technology > materials engineering > **composites**

engineering and technology > mechanical engineering > manufacturing engineering > **subtractive manufacturing**

engineering and technology > materials engineering > **coating and films**

engineering and technology > materials engineering > **metallurgy**

Programme(s)

FP1-BRITE - Multiannual research and development programme (EEC) in the fields of basic technological research and the applications of new technologies (BRITE), 1985-1988

Topic(s)

Data not available

Call for proposal

Data not available

Funding Scheme

CSC - Cost-sharing contracts

Coordinator

Gottlieb Gühring KG

EU contribution

No data

Total cost

No data

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Participants (2)

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Netherlands

EU contribution

No data

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22,Groethofstraat
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Total cost

No data

KATHOLIEKE UNIVERSITEIT LEUVEN

Belgium

EU contribution

No data

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Oude Markt 13
3000 LOUVAIN / LEUVEN

Total cost

No data

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