



## K matchmaking

28 and 29 October 2010 at K 2010 in Düsseldorf



# Catalogue

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## **K matchmaking**

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*Business Support at Your Doorstep*



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Germany

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Germany

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CO 30

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Germany

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CO 31

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Germany

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CO 34

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Germany

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CO 35

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Germany

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### P

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Germany

CO 40

PS 41

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Germany

TO 45

TO 43

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Germany

KH 47

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Germany

PS 49

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Germany

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Germany

CO 54

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### Z

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Germany

CO 55



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### ■ Company Profile

Page 1

Germany

3S Simons Security Systems GmbH

### ■ Technology Offer

DE-TO-7

**Title** Unique anti-counterfeit product safety tag system

**Abstract** A small German company has developed a forgery-proof anti-counterfeit system for objects, documents, packaging, fluid and powdery materials, but also plants and animals. The system offers sound legal protection in product liability trials. Manufacturers of original parts and products from all sectors are sought to apply the system.

#### Detailed Description

The most evident negative impact of product counterfeit are financial losses. However, when it comes to safety-relevant parts or components, the consequences can be even more ruinous, ranging from image losses to lost product liability trials which can turn into a serious economic threat especially to small and medium-sized producers of original parts.

A small German company has developed a forgery-proof security label system offering sound legal protection. The basis of the system are microscopical and extremely durable melamine alkyd polymer particles, which are sized 8-90µm. This size of the particles is unique world-wide and depends on the particular application. Each customer gets an own personal colour code which is forgery-proof and secures objects, documents and packaging as well as solid, fluid and powdery materials like a genetic fingerprint. The system is accepted as decisive evidence in court. Application mechanisms are product-specific.

The micro-colour code is invisible to the naked eye. Yet, compared to the complicated and secret manufacturing process of the colour, the identification is quite easy. A microscope or an automatic reader is enough to unmask plagiarism or to prove the originality of a product.

**Technical specifications** The security code is produced by the use of a so called "sandwich method" wherein 4 to 10 variably coloured layers are stratified. The identification system is internationally patented and trademarked and allows more than 4.35 billion different basic colour codes. With binary codes, which means the combination of numerous particles, the number of codes is practically infinite. A particular code number is the product of the allocation of a specific numerical value to each individual colour. The gauge of the layers starts with a size of 0.001 mm. The elements are produced on a top secret patent and under utmost secrecy.

#### Main Advantages

- forgery-proof system for securing objects, documents, packaging, fluid and powdery materials
- protection in product liability trials in case of product counterfeit
- durable, heat-resistant material



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	<ul style="list-style-type: none"><li>- individual and product-specific application procedures</li><li>- easy proof of originality of a product using a microscope or an automatic reader</li></ul> <hr/>
<b>Current State of Development of the Technology</b>	already on the market <hr/>
<b>Intellectual Property Rights</b>	patent(s) granted <hr/>
<b>Web Link to Present Innovative Product</b>	<a href="http://www.secutag.com">www.secutag.com</a> <hr/>
<b>Collaboration Details</b>	commercial agreement <hr/>
<b>Type of Partner Sought</b>	Industry <hr/>
<b>The Specific Area of Activity of the Partner</b>	Product manufacturers from all sectors <hr/>
<b>The Tasks to Be Performed of the Partner Sought</b>	Apply the product security system <hr/>



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### ■ Company Profile

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**Germany**

**Bergische Universität Wuppertal Mechanical Engineering**

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### ■ Partner Search

**DE-PS-47**

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**Title**

Engineering Design, Blow Moulding Simulation, Robust Design, Finite Element Simulation, Multi Body Simulation, Mechanical Design, Tolerance Analysis

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**Collaboration Details**

technical agreement; partner search  
Student Exchange

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### ■ Company Profile

Germany

BW engineering GmbH

### ■ Technology Offer

DE-TO-67

<b>Title</b>	Development of moveable plastic parts for the automotive, medical engineering and electronic industries
<b>Abstract</b>	<p>BW engineering GmbH offers a complete service package covering every aspect related to the construction and development of plastic parts for the automotive industry, medical engineering and electronic industry. They have a special experience in the development of moveable plastic parts. They are looking for automotive, medical engineering and electronics companies for commercial agreement with technical assistance.</p>
<b>Detailed Description</b>	<p>BW engineering GmbH offers a complete service package covering every aspect related to the construction and development of plastic parts for the automotive industry, medical engineering and electronic industry</p> <p>Their services include four major fields: project management, design/engineering, rapid prototyping and vendor management.</p> <p><b>Project Management:</b> The task of project management consists in the integration of single solutions to an optimal overall solution. All project managers of the company have these competencies due to their long lasting activities in automotive supply industries. They also have the possibility to post an engineer to the client company as a so-called "resident engineer".</p> <p><b>Design/ Engineering:</b> Their design and engineering services include the full service package from the preliminary design to maturity. They offer strak-preparation to outright construction and subsequent preparation of drawings (including the client's boundary conditions / system environment). Their business activities range from kinematic part design such as cupholders, ash-trays and complex center consoles to electronic assembly groups up to complex lining parts / modules, i.e. exterior mirrors, four-articulation-hinges and cast-housings. They use the following systems: CATIA V4, CATIA V5, PRO E and IDEAS.</p> <p><b>Rapid Prototyping:</b> The clients' ideas and data are implemented using modern technologies such as stereolitho-graphic (STL), selective laser-sintering, metal-investment casting and vacuum casting.</p> <p><b>Vendor management:</b> The company offers a support service to find the right suppliers for tool making, injection moulding and surface engineering.</p>
<b>Technical specifications</b>	Potential applications in the automotive, medical engineering and electronics companies, wherever small (moveable) plastic parts need to be designed and developed.
<b>Main Advantages</b>	- Comprehensive service package for plastic parts for the automotive



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	industry, medical engineering and electronic industry - High precision engineering and manufacturing of moveable parts for interior design - Additional services available thanks to close cooperation with partners from the areas of international tool development and construction, rapid tooling/ rapid prototyping and similar fields of expertise
<b>Current State of Development of the Technology</b>	already on the market
<b>Intellectual Property Rights</b>	others
<b>Collaboration Details</b>	commercial agreement; technical agreement
<b>Type of Partner Sought</b>	Industry
<b>The Specific Area of Activity of the Partner</b>	automotive, medical engineering, electronics companies
<b>The Tasks to Be Performed of the Partner Sought</b>	Integrate concepts and products elaborated by the German company into their production processes



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### ■ Company Profile

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**Germany** BW engineering GmbH

### ■ Technology Offer

**DE-TO-68**

**Title** Package of innovative technologies for tool management in the plastics industry

**Abstract** BW engineering GmbH is developing a technology package for tool management in the plastics industry. The technologies provide comprehensive information about the location and condition of tools as well as the production process, minimising machine shutdown times caused by the loss or breakage of tools. The company is looking for technical cooperation (with mechanical plant engineering firms) or a commercial agreement with technical assistance (manufacturing companies in the plastics industry.)

**Detailed Description** Most production companies are well able to define the share of procurement costs for tools on the total production process. The indirect expenditures and costs of not having the rights tools available for the right machine at the right time are much more difficult to estimate. Furthermore, the correct functioning of the tools needs to be assured at all times in order to avoid shutdowns.

The German SME is developing a package of innovative services for tools management and safe use of tools in the plastics industry, consisting of three elements:

The first and most innovative element is a sensor fixed on the outer face of the tool which facilitates an analysis of the tool condition and stability of the process. In case of pending tool breakage or abnormalities in the process, a warning is issued. Furthermore, the sensor enables the introduction of a flexible tool maintenance routine as well as random and in-process tool tests.

The second element is a precise tool-tracking process via GPS/GSM technology. The GPS/GSM-module is fixed on the outer face of the tool and reports e.g. the change of the tool location, the start or the stop of the production and the state of production (e.g. the achievement of a pre-defined target quantity to be produced). This helps to ensure the logistics supply chain.

The third element is a central storing facility for tools which are only needed for after-sales service demands. This means that additional space is made available for new mass production moulds and "older" tools which are used less frequently are protected against loss.

In all three cases the data about the tools will be available anytime and accessible from any place via a website.

The elements are available either as a package or separately.

The technologies are tailored to the needs of companies working with plastics/injection moulding, but adaptation to other processes is possible.

**Technical specifications** Effective tool management and tool security in manufacturing companies working with injection moulding processes. Other applications are possible





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### ■ Company Profile

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Germany

Center for Plastics Science and Engineering (CPSE) e.V.

### ■ Technology Offer

DE-TO-69

**Title** Technical center offers innovation and R+D in plastics material and processing technologies

**Abstract** The Center for Plastics Science and Engineering (CPSE) c/o University of Applied Sciences Iserlohn, in cooperation with the plastics cluster NRW and CPSE e.V. acts as project management organisation in the field of plastic and chemical technologies between universities, institutes, the primary industry, processors and users. The technological focus is on plastics materials, processing and innovation projects in this field. The partners together offer joint R+D resources covering the whole field

### Detailed Description

CPSE- Center for Plastics Science and Engineering e.V. and its partners support cooperative and collective R+D as well as training and education in applied plastics and chemical technologies. The association's projects are strongly concentrated on end user driven product and process systems. Our solutions in competitive and precompetitive projects help to realize market chances and to minimize risks in development of new products and efficient processes. Implementation of the relevant technological and commercial aspects and the most modern scientific project management and evaluation methods and tools are basics in our partners work.

Besides the focus on technology we integrate the social and economic and cluster aspects. This makes sure that all necessary information becomes holistically available in our projects results.

We offer:

- Scientific Staff of more than 100 employees
- Infrastructure:
  - 5 Machinery Labs and Pilot Facilities
  - 7 Testing Labs
  - Application and Pilot Facility Coatings
  - Research Lab Polymer Technology
  - 4 Training and Education Center
- Themes and industries:
  - Polymers and materials
  - Machinery
  - Processing
  - Chemistry
  - Automotive, Electric and Electronics, ITC, Medical
  - Economics
- More than 200 companies in the consortium

Customers are: companies and institutes in the plastics using segments Packaging, Building and Construction, Automotive, Medical, E+E, Furniture



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### Main Advantages

Product and process development in new applications, materials and processes for high precise injection moulding, high efficient extrusion of pipes and films, thermoforming, coating

Most of our projects are driven by new products and markets, efficiency of materials and energy use in injection moulding, extrusion and thermoforming, so the economic advantages are with new products in new markets, cost savings by increasing material and process efficiency

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### Current State of Development of the Technology

development phase – laboratory tested; available for demonstration – field tested; already on the market; others

depends on project

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### Intellectual Property Rights

others

Depending on the project, we as development partner offer several technological solutions either ready or to be developed. So we face different situations of IPR for different technologies and applications. We offer solutions for our development partners either as secret or protected know how depending on the type of project.

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### Collaboration Details

commercial agreement; technical agreement

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### Type of Partner Sought

We search for companies SME and other as well as scientific organisations that are interested in joint projects in the field of plastics and coating materials producing and processing.

Users and development partners for plastic materials either by injection moulding or extrusion in all lines of industries are of interest as partners.

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### The Specific Area of Activity of the Partner

We serve Automotive, Medical, Building, Appliance, ICT, Packaging and other industries with complex project solutions in technology, and marketing.

One actual aspect is technological development of high precision tools for injection moulding as well as rapid tooling for small series of injection moulded plastic parts.

The second actual aspect is material efficiency projects for injection moulding as well as for extrusion of film and pipe.

The third actual aspect is in projects for energy efficiency contributions by use of lightweight plastic materials e.g. for automotive and transport application.

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### The Tasks to Be Performed of the Partner Sought

- Technological analysis and benchmark
- Market analysis
- Road mapping
- Product development
- Process Development
- Joint projects
- Project management



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- Technology transfer

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### ■ Company Profile

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#### Germany COATINGS SCIENCE LAB eK

### ■ Know-how / Expertise

DE-KH-79

**Title** New product and surfaces development and engineering to maturity of high-tech organic coatings and composite systems

**Abstract** A German company offers technical services and consultancy to Original Equipment Manufacturers (OEM), end-users and manufacturers of coating materials. Their special expertise is in powder and waterborne coatings and in modern concepts such as composite coatings. Their know-how includes modern coating processes (in-mould coating) and composites (carbon-fibre reinforced plastics and sheet moulding compound). The company looks for industry partners for technical co-operation agreements.

**Detailed Description** Many of the innovations in high-tech organic or composite coatings today require scientific input derived from organic and/or polymer chemistry. Especially small and medium sized companies suffer from the fact that they do not usually employ graduated chemists. Large companies, in turn, have tended to scale down their R&D staff to a minimum in the past and thus need flexible and high-quality service providers.

A small German company offers technical consultancy service to close this gap in the sector. Services are customised for industrial reality and based on scientific and engineering education and experience. The small German company has profound expertise in environmentally-friendly coatings such as powder and waterborne coatings and modern concepts such as composite coatings. Their know-how furthermore includes modern coating processes (in-mould coating) and composites (CFRP, i.e. carbon-fibre reinforced plastics, or SMC, i.e. sheet moulding compound). This special combination of know-how addresses the increasing use of reinforced plastics in aeroplanes, cars and transportation as well as in wind power plants.

The company offers

- a) Market-to-markets solutions that cover new-product or new surface.development to maturity and may include (or stand on its own as point solution)
- b) Science-To-Market solutions:
  - industrial and/or publication based studies to identify more than state-of-the-art and / or
  - practical research to obtain findings that are essential to launching of innovations.
- c) Technology-To-Market solutions: identification and qualifying of existing technologies for new markets.

### Main Advantages

- Flexible services encompassing all of the following solutions:
  - Market-To-Market: to successfully transfer product innovations to maturity (the step out of the lab),
  - Technology-To-(New) Market: to evaluate existing technologies of other sectors for the clients' production and markets; to identify practical concepts from our



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creative staff for the clients' applications after a project end.  
Science-To-Market: to assist in gaining access to scientific findings that are essential for innovation strategies.

- Guaranteed application of quality tools: 75% of failures during usage can be traced back to the development phase. For this reason the German company is committed to strictly applying the quality tools given by their customer and has customised their R&D services to withstand audits and customer complaints: Findings are reproducible even if they are of a no, other or additional results type.

- Creative companionship after project end: constant identification of new solutions for the customers applications.

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### Intellectual Property Rights

secret know-how

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### Type of Partner Sought

Industry, OEM

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### The Specific Area of Activity of the Partner

OEM /end-users and manufacturers of coating materials from the automotive industry, aerospace industry, wind energy industry, coil coating, transportation, special SMC applications, etc.

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### The Tasks to Be Performed of the Partner Sought

Integrate concepts elaborated by the German company into their production processes.

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### ■ Company Profile

#### Germany Cologne Bonn Business

### ■ Co-operation Profile

DE-CO-96

#### Summary of company profile

Cologne Bonn Business (CBB) is the official place marketing agency and attracts investors for economic investments in the Cologne Bonn Metropolitan Area.

COLOGNE BONN BUSINESS Standortmarketing Re-gion Köln/Bonn GmbH (CBB) is the official place marketing agency and attracts investors for economic investments in the Cologne Bonn Metropolitan Area.

Our task is to highlight the investment opportunities in our region. We are the direct link from the investor to the representatives of the region. We support your company before, during, and after the investment. We are a service provider, and first contact point for foreign and domestic investors. For those who want to enhance and support economic growth in the region, we are the correct address.

COLOGNE BONN BUSINESS Standortmarketing Re-gion Köln/Bonn GmbH (CBB) markets the Cologne Bonn Metropolitan Area in a national and international context.

With over 3.4 million inhabitants, the region is not only one of the most economically strong metropolitan ar-eas in Germany, but also an attractive investment place for domestic and international investors. To in-crease the awareness of this business region in this investor-friendly environment, CBB highlights the fol-lowing powerful industries: Automotive/Engineering, Chemistry, Finance/Insurance, Trade, Logistics, and Media & IT/Telecommunication. In addition, another major advantage of location is the region's high skilled employees and executive managers in a demographic environment that does not threat at all.

CBB is a union between the following local players: eight area municipalities, the saving banks, and the business initiative society of this business region.

#### Objectives of desired contacts

to establish new contact; others  
to attracts investors for economic investments in the Cologne Bonn Metropolitan Area

#### Collaboration Details

investment



## ■ Company Profile

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Germany

**Fraunhofer Institute for Environmental Safety and Energy  
Technology UMSICHT Geschäftsfeld Nachwachsende  
Rohstoffe**

## ■ Know-how / Expertise

DE-KH-91

### Title

Applied Research and development using renewable raw materials for bio-based plastics (material development, compounding, processing) and for energy technologies

### Abstract

Fraunhofer UMSICHT develops applied and custom-made process engineering technologies. Assuming a leading position in the fields of environmental and material technologies, process engineering and energy technology, Fraunhofer UMSICHT is committed to sustainable economic development, environmentally friendly technologies and innovative approaches designed to improve the standard of living and to promote the innovation capacity of the national economy.

### Detailed Description

We develop and optimize technical processes for the production of materials and for the generation of energy from renewable resources and biogenous residues. Our strengths lie in the application of biotechnological processes and chemical conversion steps as well as in plastics technology.

We focus on environmentally compatible generation of power, heat and cold, on sustainable production of platform chemicals and on the development of novel materials and products. Our laboratories and pilot plants allow us to scale-up from first samples of new materials to small scale production.

Our R&D Service:

- Project development and scientific consulting for biogas plants
- Development and optimization of biotechnological processes, downstream processing
- Research of new chemical synthesis pathways and production of new polycondensates
- Material and product development
- Pilot and small scale production of polymer compounds and products
- Material characterization for polymer materials
- Analysis of biodegradability of substances, materials and residues
- Market and feasibility studies, technological assessments

Industrial Sectors and Target Groups:

- Plastics processing industry
- Packaging industry
- Automotive and automotive supplier industry
- Energy suppliers
- Recycling and waste disposal industry
- Chemical industry
- Food industry
- Agriculture

### Main Advantages

The primary objectives of sustainable development are the reduction of environmental pollution and the conservation of finite fossil fuels. These goals



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can be achieved by using renewable raw materials. Only by understanding and preserving nature, we will be able to benefit from its resources in the long run.

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### **Current State of Development of the Technology**

others

Technologies and products are at various stages of development - laboratory stage, available for demonstration or already on the market

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### **Intellectual Property Rights**

others

Depends

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### **Web Link to Present Innovative Product**

[www.umsicht.fraunhofer.de](http://www.umsicht.fraunhofer.de)

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### **Collaboration Details**

commercial agreement; technical agreement; partner search

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### **Type of Partner Sought**

Industry, research organisation

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### **The Specific Area of Activity of the Partner**

Process, material and product development in the above mentioned sectors

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### **The Tasks to Be Performed of the Partner Sought**

Implementation of new processes and materials based on renewable resources

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### ■ Company Profile

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**Germany** ISB Watertec GmbH

### ■ Co-operation Profile

**DE-CO-52**

#### Summary of company profile

One of the leading companies in the anode technology offers solutions for cooling water treatment to reduce maintenance

ISB Watertec GmbH is the center for the distribution of the patented technology ISB-ScaleBuster (in Western and Eastern-Europe). Our system is easy to install and without any maintenance.

More than 100.000 systems are installed in Europe.

We are looking for companies, who supply the plastic- industry and also companies already using injection molding machine. Tempering-line and injection molding machine used in the plastic-industry are a main focus of our technology, besides application in the steel, paper and chemical-industry.

We offer skilled application training, on-the-spot-support and individual commercial material.

Looking forward to meet you during the K-Exhibition in Düsseldorf.

#### Objectives of desired contacts

#### Collaboration Details

distribution; supply; production



## ■ Company Profile

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**Germany** ISB Watertec GmbH

## ■ Technology Offer

**DE-TO-73**

**Title** Galvanic water treatment against corrosion and lime deposit

**Abstract** A German company offers a galvanic water treatment technology in order to avoid corrosion and lime deposit in production plants. A special zinc anode protects the machines without a need for chemical treatment, reducing the cost for maintenance and extending the plants' operational life span. Industrial production companies from all sectors are sought to integrate the technology into their plants.

**Detailed Description** Industrial producers need specially treated and process water for their production units. Increased costs for maintenance due to corrosion, lime and biofilms deposits, reduced operating life, high costs for chemical dosing agents and the control of measurement and control technology and data communication and breakdown of production-related systems are frequent problems in this context. Therefore, there is a need for an efficient and low-cost protection against corrosion, deposits and biofilms.

A German company provides an alternative to traditional chemical water treatment, more precisely a galvanic water treatment system for protection against corrosion and lime deposits. The patented system departs from the crystal structure of lime. Without using chemical additives and salts, it transforms crystal lime needles in neutral, non-adhesive lime balls. A 30 to 45 cm brass cylinder is screwed or flanged into the water supply system. Inside this cylinder there is a high purity zinc anode. When getting in contact with water, a potential tension of up to 1 volt builds up between both metals. As a consequence, small amounts of zinc are continuously discharged into the water. This has two effects: Instead of the tube wall, it is the zinc anode which corrodes. Furthermore, the zinc causes the small needle-shaped lime particles in the water to amalgamate into larger particles. The resulting larger lime balls are more easily removed by the current than the small particles. After some months after the installation, equilibrium is reached in which a new, thin lime layer lines the tube and protects against new lime deposits and corrosion.

### **Main Advantages**

- Cost savings in the area of maintenance by reducing corrosion and deposits
- Extension of maintenance intervals of heat exchangers, engine cooling systems, pumps, etc.
- Increase of productivity and extension of operational life (-span)
- Reduction of costs for chemical dosing agents (phosphate chemicals, biocides)
- Use of energy-saving potential through increased heat transfer in cooled plants
- No maintenance cost apart from periodical exchange

### **Current State of Development of the**

already on the market



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### Technology

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**Intellectual Property Rights**

patent(s) granted

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**Web Link to Present Innovative Product**

[www.isb-watertec.de](http://www.isb-watertec.de)

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**Collaboration Details**

commercial agreement

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**Type of Partner Sought**

industry

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**The Specific Area of Activity of the Partner**

any industrial operation where corrosion and lime deposits in water pipes are a problem

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**The Tasks to Be Performed of the Partner Sought**

integration of the technology into the partner's processes

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### ■ Company Profile

Germany

**Kunststoff-Institut für die mittelständische Wirtschaft NRW GmbH**

### ■ Co-operation Profile

DE-CO-44

#### Summary of company profile

German research institute is looking for partner in plastic processing industry for technology transfer and co-operative projects

The Kunststoff-Institut fuer die mittelstaendische Wirtschaft NRW GmbH (K.I.M.W.) was funded in 1988 as an "extended workbench" and combines tomorrow's scientific know-how with today's production capabilities. KIMW is focussing on increasing the quality and economic efficiency – especially for injectionmoulded parts made of thermoplastic and thermoset materials.

EN ISO 9001 certified KIMW offers a number of services for the benefit of its customers:

- laboratory accredited to DIN EN ISO/IEC 17025:2000
- support with the selection, development and optimization of products, moulds and processes
- trainee- and internship

KIMW is one of the most experienced service providers in this field of expertise with currently app. 45 employees and is a private-sector service provider supported by an association of shareholders of approximately 154 companies.

#### Objectives of desired contacts

#### Collaboration Details

project implementation; others  
Know-how and technology transfer



## ■ Company Profile

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Germany

**Kunststoff-Institut für die mittelständische Wirtschaft NRW GmbH**

## ■ Partner Search

DE-PS-101

### Title

Collaborative project on antibacterial surfaces

### Abstract

A German institute specialising in the materials sector is carrying out a joint company project on antibacterial surfaces. The objective is to utilise the institute's bundled competences in the field of antibacterial surfaces in order to optimise already existing combinations of matrix and antibacterial components and to evaluate new components and matrix materials regarding their suitability for injection moulding. Companies from the materials sector are sought to participate in the project.

### Detailed Description

The growth of microbes and germs on surfaces is in many ways an undesired effect. They directly or indirectly constitute a breeding ground for bacteria or viruses, and could have a pathogenic effect on people. Microorganisms, therefore, constitute a hygiene risk, compromise the utility value of the surfaces, or can cause deterioration. Not only does this particularly apply to sensitive areas, such as medical technology, but it also applies to everyday products, such as light switches or telephones. The demand for antimicrobial surfaces has recently been increasing drastically in that, for many products, an antibacterial surface is a very useful feature. The current discussions on the increasing number of infections caused by multi-resistant staphylococci (pyogenic organisms) in hospitals and/or doctor's offices have increased the demand for products with functional surfaces.

A German institute in the materials sector is now carrying out its 2nd joint company project on "Antibacterial Surfaces". The objective is to utilise the institute's bundled competences in the field of antibacterial surfaces in order to optimise already existing combinations of matrix and antibacterial components and to evaluate new components and matrix materials regarding their suitability for injection moulding. In addition, there will be an investigation into quality assurance measures for testing products equipped with antibacterial components, which will not make use of the direct effectiveness testing. Further investigations into innovative and cost-effective processes for the manufacturing of antibacterial surfaces will complete the project. Apart from systems containing silver, the focus is on copper-based systems and organic components, which constitute interesting active substance groups.

### Main Advantages

- evaluation of new and optimisation of existing combinations of matrix and antibacterial components
- investigation into quality assurance related to products with antibacterial components
- insights into innovative and cost-effective processes for the manufacturing of antibacterial surfaces

### Current State of

others



## K matchmaking

28 and 29 October 2010 at K 2010 in Düsseldorf

### Development of the Technology

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### Intellectual Property Rights

others

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### Web Link to Present Innovative Product

<http://www.kunststoff-institut.de/download/561> or NRW booth (hall 6 / D76) at K! fair

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### Collaboration Details

partner search

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### Type of Partner Sought

Industry

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### The Specific Area of Activity of the Partner

- Companies that are looking to achieve a sustainable product improvement by equipping plastic products with antibacterial surfaces in order to obtain a competitive advantage
  - Companies that want to be ready as suppliers for future products, e.g. in the fields of medical, electrical, and building services engineering
  - Manufacturers of raw materials and finishes
- 

### The Tasks to Be Performed of the Partner Sought

Participate in the collaborative project

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## ■ Company Profile

Page 22

Germany

**Kunststoff-Institut für die mittelständische Wirtschaft NRW GmbH**

## ■ Partner Search

DE-PS-74

<b>Title</b>	Testing of sustainable materials – technical application of bio-based components
<b>Abstract</b>	<p>A German institute specializing in materials/plastics has initiated a cooperative project for the testing and assessment of bio-based materials for applications relevant to the plastics industry. The project pays special attention to renewable raw materials and natural-fibre reinforced plastics as well as to processes such as injection moulding and surface treatment. Companies from the plastics industry are sought who are willing to join the project.</p>
<b>Detailed Description</b>	<p>The growing awareness of the finiteness of our natural resources, the introduction of various Environmental laws, but also the demand of the market for "green" products have led to an increased use of bio-based materials or natural fiber materials (NFC, WPC) in all industries. The product manufacturers not only react to rising commodity prices, but also build up a profile as sustainable businesses in the public. The beginnings of material development date back to the 1980s/90s. At that time, however, products did not penetrate the market, which is in part due to the missing political framework and therefore lack of economic pressure. Meanwhile, the second generation of these materials is being used successfully especially in packaging applications. The third generation of these materials is mainly used in technical applications. They are the centre of interest of a cooperative R&amp;D project initiated by a German Materials institute. The aim of this project is to assess and evaluate different groups of materials with respect to material properties, tools, construction/ engineering, processing and surface. Selected trials will bring valuable results about the possibilities of implementation. The focus is on renewable raw materials and natural-fibre reinforced plastics. They will be sampled and investigated with regard to special properties. The use of special procedures such as injection moulding and surface treatment is especially considered.</p> <p>The following aspects will be covered by the project:</p> <ul style="list-style-type: none"><li>-□Market research – elaboration/provision of information sources, databases, studies, etc.</li><li>-□Assessment of materials in terms of processing by injection moulding: material preparation, plasticization, flow behaviour</li><li>-□Constructional and tool-related assessment</li><li>-□Analysis and definition of material characteristics (shrinkage, distortion)</li><li>-□Material tests in the light of special requirements from the various Industries - such as odour testing, Fogging, aging test (solar simulation, weathering, moisture resistance, etc.)</li><li>-□selected surfaces and decorative methods clarifying the implementation options (investigation and characterization of surface properties, e.g. scratch resistance, roughness, colour, surface energy)</li></ul>



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### Main Advantages

- Answers to open questions with regard to the use of bio-based components for different technical applications
  - Accelerated market launch of bio-based materials
  - Exploiting the benefits related to the use of bio-based materials (reduction of CO<sub>2</sub>, availability of resources, marketing, etc.)
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### Current State of Development of the Technology

others

Collaborative project

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### Intellectual Property Rights

others

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### Web Link to Present Innovative Product

Hall 6 / D76 at K Fair or <http://www.kunststoff-institut.de/download/1216>

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### Collaboration Details

partner search

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### Type of Partner Sought

Industry

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### The Specific Area of Activity of the Partner

Plastic producers and processors

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### The Tasks to Be Performed of the Partner Sought

Participate in the cooperative project

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## ■ Company Profile

Page 24

Germany

**Kunststoff-Institut für die mittelständische Wirtschaft NRW GmbH**

## ■ Partner Search

DE-PS-76

### Title

Injection-moulded plastic-glass composites

### Abstract

A German institute specialising in materials has initiated a cooperative project on injection-moulded plastic-glass composites in order to combine the beneficial properties of both materials (e.g. scratch-resistance of glass and design freedom of plastics). Companies from the plastics industry are sought for participation in the project.

### Detailed Description

The combination of glass and plastic is an ideal composite for technical and decorative products. Glass is extremely scratch-resistant and transparent, and is thus ideal for display and decorative applications. Plastics are characterised by their enormous design freedom and high integration level, formability, low material cost and low specific weight.

A German plastics/materials institute has initiated a cooperative project for elaborating a basis for linking glass and plastics by injection-moulding processes. The aim is to use glass e.g. for display units and implement the fixing for later integration into elements via the corresponding plastics components. The plastic components can have a design or a technical function. The scratch-resistance of glass can therefore be combined with design freedom of plastics in one element.

The combination of this composite can be achieved through different joining technologies. When small numbers of elements are processed, often gluing, foaming or clipping technologies are used. However, when treating large amounts of elements, insert moulding of the glass element can be an option. The advantage of this is that the joining operation is carried out directly during the production process of the plastic element, saving one production step. Moreover, a higher degree of tightness between the components can be reached which could be relevant for external applications. The aim of the project is to investigate the prerequisites of insert-moulding glass with plastics and enable participants to choose the right plastic and glass materials for their processes as well as to provide them with article, process and tool-specific background knowledge according to their needs and specifications.

### Technical specifications

The safe insertion of fragile glass into the injection mould is realized by means of flexible sealing elements in combination with a spring-loaded core. The subsequent insert moulding process is done by means of foamed thermoplastic moulding with variothermal temperature control according to the BFMOLD™ principle to achieve a streak-free high-quality surface.

### Main Advantages

- Higher tightness between the two components
- Saving one production step
- Higher cost-effectiveness than conventional joining technologies.



## K matchmaking

28 and 29 October 2010 at K 2010 in Düsseldorf

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**Current State of Development of the Technology**

development phase – laboratory tested

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**Intellectual Property Rights**

others

Ongoing collaborative project

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**Collaboration Details**

partner search

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**Type of Partner Sought**

Industry

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**The Specific Area of Activity of the Partner**

Plastic processors who could benefit from the use of glass-plastic composites

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**The Tasks to Be Performed of the Partner Sought**

Participate in the collaborative R&D project

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■ **Company Profile**

**Germany**

**Kunststoff-Institut für die mittelständische Wirtschaft NRW GmbH**

■ **Technology Offer**

**DE-TO-72**

**Title**

Variothermal temperature control using BFMOLD™ technology

**Abstract**

A German institute has developed a new temperature control technology for injection moulding processes. It enables extremely quick and even cooling of the mould areas, especially for wide, flat parts, with the benefit of short cycle times, prevention of warpage, sink marks and joint lines as well as a reduction in tension. Users of injection moulding technology are sought to optimize their processes by applying the technology.

**Detailed Description**

In injection moulding technology, mould temperature control has never been more important than today. Optimising the cycle time and increasing the component quality by means of variothermal processes are among the issues to be addressed by modern temperature control technology.

A German institute has developed a new temperature control technology for injection moulding processes. BFMOLD™ technology can not only be used for the cooling of flat components but also in combination with variothermal temperature control using water. In this way, this technology allows for short heating and cooling times.

In contrast to moulds with conventional tempering channels, BFMOLD™ technology utilizes the entire space underneath the cavity for heating and cooling. The ball filling favors a highly efficient flow through the tempering channel and can at the same time be positioned very close to the surface of the cavity. This makes extremely quick and even cooling of the mould areas possible, especially for wide, flat parts, with the benefit of short cycle times, prevention of warpage, sink marks and joint lines as well as a reduction in tension.

**Technical specifications**

BFMOLD™ technology is particularly applicable to production of large parts in amorphous plastics such as ABS, ABS/PC blends. Although limited to relatively flat parts with shallow draws, there is a good potential in automotive and telecommunication applications.

**Main Advantages**

- Cost effective and simple manufacturing of moulds especially for wide, flat parts
- Production of high-gloss surfaces without weld lines, warpage and sink marks
- Short cycle times

**Current State of Development of the Technology**

already on the market



## K matchmaking

28 and 29 October 2010 at K 2010 in Düsseldorf



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<b>Intellectual Property Rights</b>	others
<b>Web Link to Present Innovative Product</b>	The technologies will be presented at the NRW booth (Hall 6/D76) as well as at the Wittmann-Battenfeld booth (Hall 16/D22). More information is available online: <a href="http://www.kunststoff-institut.de/download/1142">http://www.kunststoff-institut.de/download/1142</a>
<b>Collaboration Details</b>	commercial agreement
<b>Type of Partner Sought</b>	plastics industry
<b>The Specific Area of Activity of the Partner</b>	users of injection moulding technology
<b>The Tasks to Be Performed of the Partner Sought</b>	apply the technology

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## K matchmaking

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### ■ Company Profile

Page 28

**Germany** kunststoffland NRW e.V.

### ■ Know-how / Expertise

**DE-PS-83**

**Title** Kunststoffland NRW - encouraging competence and excellence in North Rhine-Westphalia

**Abstract** kunststoffland NRWe.V. association (kunststoffland = plastics land) was founded as a network for all players along the total value creation chain in NRW – in other words, from raw material manufacturers to processing companies and suppliers, right up to research institutes and universities. The association acts as the cluster manager of the profile-defining cluster Kunststoffland NRW on behalf of the state government of North Rhine-Westphalia.

**Detailed Description** With its distinct cross-sectional character, the plastics industry is a carrier and driver of innovation in the fields of materials, production processes, and products for practically all areas of life.

Players from the whole plastics industry in NRW have joined to form kunststoffland NRW to implement and benefit from the common goal of "Consolidating competence and excellence in the industry". kunststoffland NRW pursues the networking of its players and offers the platform for information, communication and cooperation for this purpose.

kunststoffland NRW makes direct use of its close contacts to relevant decision-makers in public administration and at various political levels to ensure that the conditions for successful economic activity, education and research are met in and by NRW.

kunststoffland NRW provides companies with information, organises events and makes available a wide range of services as a broker and consultant, e.g. in the fields of innovation and cooperation management, financing and sponsorship, foreign trade, corporate succession, recruiting and further education.

kunststoffland NRW functions as a bridge for industry, research and science. The association helps to consolidate research, training and further education, provides transparency in the state's scientific and education landscape and promotes the transfer of knowledge in the form of research results to commerce.

**Technical specifications** The key figures for the region of North Rhine-Westphalia are

- \* approximately 3.000 companies and institutions in plastics industry
- \* 100.000 employees
- \* about 25 bn. Euro turnover p.a.

Plastics industry in North Rhine-Westphalia that is:

- plastics producer
- plastics processors
- mechanical engineering



## K matchmaking

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- research and development
  - education
  - trade and supply
- 

### **Collaboration Details**

others

Meet partners along the economic value-added chain for advanced materials such as universities and research institutes, raw-material producers and chemical industry, manufacturers and plastic processing industry

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## K matchmaking

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### ■ Company Profile

Page 30

Germany

Kunststoffwerkstatt - Projekte im Netzwerk

### ■ Co-operation Profile

DE-CO-88

#### Summary of company profile

Co-operations along the value chain

To organise, to intensify and to shape the co-operations along the value chain is the main objective of the "plastics workshop" (Kunststoff-Werkstatt), which is an initiative of the Dr. Reinold Hagen Stiftung and the Bonn-Rhine-Sieg University of Applied Sciences.

The plastics workshop, as central point for contacts and users, runs projects in four different fields. They represent the value chain of the plastics industry: From skilled employees to certain technical development projects, f.e. topics like efficiency of material and resources as well as biopolymers.

With more than 13.000 employees the plastics industry in the Bonn/Rhein-Sieg region is one of the most important employers of the processing industry.

#### Objectives of desired contacts

#### Collaboration Details

project development; others

Organisations along the value chain who could benefit from cross-boarder co-operations



## K matchmaking

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### ■ Company Profile

Page 31

Germany

M.J. Additive GmbH

### ■ Co-operation Profile

DE-CO-65

#### Summary of company profile

Additive systems for reduction of cycle times and improved properties

The SME, established in 1983, develops and produces additive systems for the polymer and plastic converting industry with a focus on injection molding.

Objectives of the state-of-the-art products are

- to reduce cycle times,
- to make material weatherproof,
- to prepare materials with anti-static effect
- to make materials transparent.

Additives are available for nearly all polymer materials. They are specially adapted to customers' wishes which makes them unique. A dose of 0.1% to 1% is enough to improve the processes, the properties and the quality. Free samples are available on request.

The company is looking for business partners in the polymer and plastic converting industry as well as for partners producing polymer and plastic materials.

#### Objectives of desired contacts

#### Collaboration Details

distribution; supply; research and development



## K matchmaking

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### ■ Company Profile

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Germany

M.J. Additive GmbH

### ■ Technology Offer

DE-TO-75

<b>Title</b>	State-of-the art additive systems for the plastics industry
<b>Abstract</b>	<p>A German company produces state-of-the-art additive systems for polymer producers and processors. The additive's effects include reduced cycle times, better product/surface quality and improved release properties of the final product. Companies from the plastics industry are thought for commercial agreement with technical assistance.</p>
<b>Detailed Description</b>	<p>A medium-sized German company is a leading globally- operating manufacturer of state-of-the-art additive systems for polymer producers and processors.</p> <p>The additives are blended in in a concentration of about 0.1-1% and result in reduced cycle times, better product/surface quality and improved release properties of the final product by acting upon the viscosity of the materials.</p> <p>Their product range includes</p> <ul style="list-style-type: none"><li>- <input type="checkbox"/> Customer-specific blends, developed by the customer or together with the customer</li><li>- <input type="checkbox"/> Anti-Fogging agents inhibiting fogging on the surface of thermoplastics</li><li>- <input type="checkbox"/> Nucleating agents improving clarity, stiffness and higher productivity</li><li>- <input type="checkbox"/> UV Absorbers and UV Stabilisers for thermoplastics</li><li>- <input type="checkbox"/> Cling agents improving surface adhesive properties of thermoplastic sheets and films</li><li>- <input type="checkbox"/> Endothermic Foaming agents</li><li>- <input type="checkbox"/> Stabiliser systems improving life time and quality of products</li><li>- <input type="checkbox"/> Antioxidant systems improving life time and quality of products and enlarges the application field</li><li>- <input type="checkbox"/> Anti Blocking agents for film and sheet applications</li><li>- <input type="checkbox"/> Lubricants, Processing agents improving material flow or surface properties of thermoplastics</li><li>- <input type="checkbox"/> Antistatic agents for thermoplastics</li></ul>
<b>Main Advantages</b>	<ul style="list-style-type: none"><li>- Reduction of cycle times</li><li>- Higher quality of products and/or surfaces</li><li>- Improved release properties</li></ul>
<b>Collaboration Details</b>	commercial agreement
<b>Type of Partner Sought</b>	Industry
<b>The Specific Area of Activity of the Partner</b>	Production and processing of polymers



## K matchmaking

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### **The Tasks to Be Performed of the Partner Sought**

Use the offered additives with technical assistance from the German company

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## K matchmaking

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### ■ Company Profile

Page 34

Germany

**Netzwerk Innovative Werkstoffe (Network Innovative Materials)**

### ■ Co-operation Profile

DE-CO-84

#### Summary of company profile

German Network Innovative Materials in the Cologne region initiates co-operations in the field of advanced materials

The Network Innovative Materials is meant to act as a catalyst for innovation-supporting dialog and successful co-operation in the field of advanced materials. Key differentiators of the initiative are its focus on the Rhineland and on partners along the entire supply chain.

The network aims at both individual business success for its partners and economic growth in the Rhineland. Its activities will continuously, sustainably and comprehensively strengthen the expertise of all partners. The interdisciplinary approach of "open innovation" will contribute to enhanced competitiveness.

#### Objectives of desired contacts

to establish new contact; others  
Meet partners along the economic value-added chain for advanced materials such as universities and research institutes, chemical industry, manufacturers and plastic processing industry

#### Collaboration Details

research and development; project development



## K matchmaking

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### ■ Company Profile

Page 35

**Germany** **NRW.Europa**

### ■ Co-operation Profile

**DE-CO-1**

#### Summary of company profile

Technology transfer and innovation management

NRW.Europa is the Enterprise Europe Network knot in North Rhine-Westphalia. Under the name NRW.Europa, ZENIT GmbH and the NRW.BANK are together, offering the best possible support in the area of transnational European business.

Our service package encompasses comprehensive advice, for example for internationalisation and innovation projects, in the search for national and international business partners as well as in applications for public funding.

Our services are available to enterprises, organisations close to the business and research communities, as well as universities in North Rhine-Westphalia. Our top priority is small and medium-sized enterprises (SMEs).

NRW.Europa is a partner in the Enterprise Europe Network established at the beginning of 2008 by the European Commission in over 40 countries. The Network offers an extensive spectrum of services from one source for all questions related to the EU.

#### Objectives of desired contacts

to establish new contact; to deepen existing contacts; others  
Promotion and organisation of the brokerage event



## K matchmaking

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### ■ Company Profile

Page 36

**Germany** **NUON Energie und Service GmbH**

### ■ Co-operation Profile

**DE-CO-51**

#### Summary of company profile

NUON, operator of industrial park Oberbruch in Heinsberg near Aachen, Germany, offers premises and facilities for the plastics industry

NUON, part of Vattenfall, is owner and operator of Industriepark Oberbruch. NUON Energie und Service GmbH supplies energy, steam and all kind of utilities for chemical/producing companies incl. energy related services and last but not least SPACE.

Industriepark Oberbruch is close to RWTH Aachen and described as its "extended workbench".

Industriepark Oberbruch is clustered as: "Processing chemicals, plastics and new materials"

Industriepark Oberbruch is home to innovative companies like the carbon fibres producer Toho Tenax, GNT-producer of dyeing edibles and bio-active substances from renewable raw materials, and CFCL-producer of solid oxide fuel cells, et al.

#### Objectives of desired contacts

to establish new contact; to deepen existing contacts  
site searching companies from the plastics industry

#### Collaboration Details

production; investment



## K matchmaking

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### ■ Company Profile

Page 37

Germany

NUON Energie und Service GmbH

### ■ Partner Search

DE-PS-50

#### Title

NUON, part of Vattenfall is an energy company which operates Industry/Chemical Parks. Industriepark Oberbruch, located close to RWTH Aachen and Düsseldorf in Germany is looking for (plastics) companies

#### Main Advantages

Green chemical industry parks

The industrial park model offers not only economic but also ecological benefits.

Chemical parks and ecology are commonly regarded as diametrically opposed. Such prejudiced thinking overlooks the valuable synergy effects for companies and the environment that can result from a jointly used infrastructure and an effective utilisation of energy resources.

For some people, compatibility of environmental protection and cost effectiveness still remains an unsolved conundrum. The problem that end-of-pipe environmental protection technology are costly looms large, especially for small and medium sized enterprises (SME) with a high environmental impact, i.e. those companies which place a substantial burden on the environment in relation to added values through their consumption of resources and through their emissions. Industrial and chemical parks offer a concept for environmental protection and cost reduction.

Whereas industrial parks often form the basis for national economic development plans in Asia, the driving force in Germany and other European countries is the structural transformation of industry. In East Germany chemical parks arose through the disbandment of the former state-owned conglomerates; in West Germany entrepreneurial trends, such as the tendency of companies to focus on their core business, played the greatest role. Today, chemical and industrial parks are the method of choice for several companies to exploit the economic and ecological advantages of effectively run sites.

The principal design features include, for example, utilisation of the existing infrastructure and systematic analysis and exploitation of synergy effects. In this way – largely without recourse to capital intensive technologies – it is possible to enhance the efficiency of resource utilisation. In order to reduce their environmental impact, companies with the high resource consumption and high emission levels require a special infrastructure, which is expensive to install and operate. A common infrastructure, on the other hand, coordinates energy and water consumption, thus assuring a more effective utilisation of resources. This not only lowers production costs for the individual companies, but also makes a sizable contribution to environmental protection – thus resolving the putative conflict between economic operation and ecology.

Conflict between economic operation and ecology has been resolved

For energy supplies this means that optimum use must be made of primary



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energy sources. In the case of fossil fuels this can be accomplished above all by combined heat and power generation (CHP). The advantage of CHP becomes especially obvious when there is a constant high demand for heat since the amount of process heat produced is often significantly greater than the amount of electrical energy generated. At some sites, excess steam, which can also be transformed into cold if required, is fed into local district heating grid or distributed to other industrial facilities outside the industrial park. Another example of efficient energy generation is provided by novel multi-fuel power plants which produce energy from biomass, natural gas, and coal gasification.

Incineration plant for hazardous wastes combust gaseous wastes and return the energy and heat generated to the production cycle. The overall energy consumption is made up of the individual requirements of the companies in the park in such a manner as to ensure optimum utilisation of available energy supplies.

Integrated environmental protection means utilisation of resources with minimum possible waste – for example by reusing water instead of using fresh water. The individual emissions of the member companies should not leave the industrial park as long as any other company can make use of them. In spite of the overwhelming priority given to avoiding resource consumption and pollutant emission, end-of-pipe technologies are still used in order to reduce the level and/or potential danger of the unavoidable pollutant flows. In case of waste water it is clear that the environmental burden cannot be effectively reduced without purification plant. Discharge of industrial waste water that is resistant to biological treatment into municipal sewage treatment plants frequently causes problems because such plants are designed for readily degradable waste. Industrial waste water is therefore frequently “diluted” prior to discharge into the public sewer system. While this admittedly lowers the concentration of pollutants, it does not reduce the absolute quantities introduced.

### Low-emission production instead of end-of-pipe technologies

Just 20 years ago, environmental protection was largely based on end-of-pipe technologies, today the main emphasis is low-emission production processes, in-house waste avoidance by integrated environmental technologies or internal recycling. The ecosystem practiced in industrial parks combines production and recycling processes and contributes to a permanent reduction and environment pollution.

This concept offers not only ecological but also economic benefits: Economic performance is improved, emissions and waste are reduced, and resource productivity is enhanced. “Ecoparks” such as Oberbruch Industry Park ([www.industriepark-oberbruch.de](http://www.industriepark-oberbruch.de)) operated by NUON close to Aachen and Düsseldorf make full use of the possibilities of rationalisation and act in accordance with the motto: “Think globally – act locally”.

Oberbruch Industry Park located on a 272-acre (110 hectare) site formerly owned by the chemical giant AkzoNobel is one of the numerous industry parks that came into being as chemical companies disinvest or transferred some operations outside Germany. Once those operations left, the sites had enough extra energy capacity and space to host new enterprises seeking a location in the heart of Germany’s industrial belt. Additionally to the described economic and ecological benefits production-oriented start-ups will find excellent research and development conditions in the Oberbruch Industry Park due to the close cooperation with one of the world’s leading technical universities, the RWTH Aachen ([www.rwth-aachen.de](http://www.rwth-aachen.de))



## K matchmaking

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### Facts for decision makers:

#### Positive Eco-Balance

- SMEs with a high environmental impact are particularly exposed to the problem that end-of-pipe environmental technologies are very expensive.
- In relation to added value SMEs place a relatively high burden on the environment through consumption of resources and through their emissions.
- Industrial and chemical parks offer a concept for environmental protection and cost reduction.
- Synergies between companies operating in an industrial park save resources and preserve the environment.
- At Oberbruch Industry Park additional to economic and ecological benefits excellent R&D conditions for innovative products.

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### Current State of Development of the Technology

already on the market

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### Web Link to Present Innovative Product

[www.industriepark-oberbruch.de](http://www.industriepark-oberbruch.de)

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### Collaboration Details

commercial agreement

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### Type of Partner Sought

Plastics companies; bio-plastics producers; producers of raw-materials for bio-plastics; composites companies; fibres producers, recycling companies

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## K matchmaking

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### ■ Company Profile

Page 40

**Germany** polymeroptix GmbH

### ■ Co-operation Profile

**DE-CO-94**

#### Summary of company profile

Precision components for optical systems and Microsystems in plastics injection moulding

Polymeroptix GmbH develops and produces high precision components for optical systems and microsystems according to customer specification. Over many years we gained deep experience in design, production and assembling of plastic components and systems.

In the course of many years we have gained much experience in the design, production and assembly of plastic components and systems.

Examples for Applications

- LED Lighting
- Sensors / Scanners
- Projectors
- Diagnose optics; endoscopes
- Light guides

#### Objectives of desired contacts

#### Collaboration Details

supply; production; research and development; project development



## ■ Company Profile

**Germany** **polymeroptix GmbH**

## ■ Partner Search

**DE-PS-93**

**Title** High precision optical and micro system technology in plastic injection moulding

**Abstract** High precision optical and micro system technology in plastic injection moulding

**Detailed Description** Polymeroptix GmbH utilises the capabilities in ultra precision tooling and - moulding to develop and produce optical precision parts such as lenses and light guides in plastics. As a spin off company from Fuji Rec. Media GmbH, Film our company has 20 years experience guarantee for the very specific process chain to fulfil the challenging demands of the optical - and lighting industries.

To utilize the capabilities and experience in polymer optics design, ultra precision tooling, injection-/ compression moulding and coating in the fast growing market of LED's, sensors and optics the polymer optics can be

- □shaped in almost unlimited forms,
- □equipped with nano- and microstructures,
- □equipped with mechanical, functional elements

if needed or beneficial.

Innovative products encompass:

- Optical free form shapes
- Spheres, aspheres
- Fresnel lenses
- Mirrors, reflectors, beam splitters, filters
- Prisms
- Microstructures
- Diffractive optical elements (DOE) / fresnel structures
- Lens arrays
- Ophthalmic optics
- Optical systems
- Light guides

Common market applications are LED-lighting, light guides, medical / diagnosis optics, automotive, digital rear projection, aircraft, sensors, photo voltaic etc.

## **Main Advantages**

Polymer optics capabilities and manufacturing technologies lead to a yet unknown high degree of freedom in optical systems design and final products compared to conventional optics:

- less weight and smaller,
- more robust,
- less costly but
- more powerful

## **Current State of Development of the**

already on the market



## K matchmaking

28 and 29 October 2010 at K 2010 in Düsseldorf



### Technology

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**Collaboration Details** license; commercial agreement; technical agreement; partner search

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**Type of Partner Sought** Industry

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**The Specific Area of Activity of the Partner** Manufacturer of optics and micro optics, LED- and sensor applications, optical diagnosis-systems, other non optical high precision applications (i.e. hydraulics)

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**The Tasks to Be Performed of the Partner Sought** Apply the offered optics and micro optics with technical assistance or co-operative development of innovative solutions

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## K matchmaking

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### ■ Company Profile

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**Germany** SiCon GmbH

### ■ Technology Offer

**DE-TO-63**

<b>Title</b>	New shredding line for light mixed scrap
<b>Abstract</b>	<p>The German engineering company Sicon is specialised in recycling solutions and offers a new shredding line for light mixed scrap, tailored especially to the requirements of small and medium sized recycling companies. The line is characterized by high performance, light maintenance and comparably low investment costs. It complies with all environmental regulations. Partners are sought for commercial agreements with technical assistance.</p>
<b>Detailed Description</b>	<p>Sicon GmbH is specialised in the development and implementation of process solutions regarding the recycling of production waste for industrial and municipal customers.</p> <p>They are now introducing a new shredding line for light mixed scrap up to 8 mm thickness and a capacity of 15 t/hour. The line was developed especially for small and medium sized companies as it guarantees high performance at comparably low investment.</p> <p>The plants work with two stage technology. The first stage works with a rotary shear and a vertical shredder for compacting. Air separation, metal separation and a dust removal complying with all environmental legislation complete the process.</p> <p>Emphasis was put on favourable wear costs and optimum ease of maintenance. For the first time medium sized scrap recycling companies are given the opportunity to produce shredder or even chill scrap decentrally at competitive costs.</p> <p>The shredding line is well suited for electro and electronic scrap recycling. It can be integrated in complete WEEE processing plants.</p>
<b>Main Advantages</b>	<ul style="list-style-type: none"><li>• High performance</li><li>• Low investment</li><li>• Easy maintenance</li><li>• New business opportunity for small and medium-sized recycling companies</li></ul>
<b>Current State of Development of the Technology</b>	already on the market
<b>Intellectual Property Rights</b>	others Trade mark EcoShred
<b>Web Link to Present Innovative Product</b>	<a href="http://www.sicon.eu">www.sicon.eu</a>



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<b>Collaboration Details</b>	commercial agreement
<b>Type of Partner Sought</b>	Recycling companies are sought for commercial agreement with technical assistance. The German company will offer all relevant support in assembly, engineering, technical consultancy.



## K matchmaking

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### ■ Company Profile

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Germany

SiCon GmbH

### ■ Technology Offer

DE-TO-64

**Title** Unique know-how, engineering and latest technology for sorting, recycling and treatment of residues

**Abstract** SiCon GmbH offers its unique know-how, engineering and technology for plants for sorting, recycling and treatment of industrial and post-consumer waste, especially shredder residue and electronic scrap. Based on many years of experience they develop individually tailored solutions which result in higher purity of the separated metals. Industrial or engineering partners are sought for technical and commercial agreements with technical assistance.

#### Detailed Description

SiCon GmbH has expertise and unique know-how in engineering of plants for sorting, recycling and treatment of industrial and post-consumer waste, especially shredder residue and electronic scrap. For more than 10 years they have been actively engaged in all fields relating to shredder residue processing and recycling. In co-operation with a university and with automotive industry technologies are developed, applied, tested and continually improved.

The company offers comprehensive and professional engineering services to scrap recycling companies, in particular to those operating shredder plants.

This includes the development of solutions for the processing and recycling of shredder and other production waste generated by scrap recycling aggregates or for automated sensor-controlled non-ferrous metal processing. This may also include preparation of complete recycling concepts and assisting in the implementation in case that comprehensive disposal services to waste disposal facilities are required.

Their solutions for dry-mechanical processing of shredder heavy fraction are based on screening and separation of Fe-, non-ferrous- and stainless steel. Turnkey plants can also be designed.

The solutions are economically viable and characterised by a very high purity of the separated metals, in particular regarding the fines content, which in most existing facilities is only poorly separated.

**Technical specifications** Current and Potential Domain of Application:

Shredder operators, industry dealing with industrial and post-consumer waste, especially shredder residue and electronic scrap.

References include separation of PVC from shredder residues, development of alternative recovery possibilities for substitute fuels, analysis and optimization of internal flow of residues, engineering of a screening and metal separation plant for shredder residue.

#### Main Advantages

- Experience and know-how gathered in more than ten years and



## K matchmaking

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	<p>many projects</p> <ul style="list-style-type: none"><li>• Close co-operation with University ensures access to latest research results</li><li>• Tried and tested shredder residue processing developed in co-operation with car industry</li><li>• Higher purity of separated materials than is achieved with conventional machinery</li><li>• Waste reduction is achieved</li><li>• European directives are met</li><li>• Solutions are tailored to individual problems</li></ul>
<b>Current State of Development of the Technology</b>	already on the market
<b>Intellectual Property Rights</b>	others  Some processes patented, some patent applied for, some secret know-how
<b>Collaboration Details</b>	commercial agreement; technical agreement
<b>Type of Partner Sought</b>	Companies interested in the know-how, expertise and technologies are sought for commercial co-operation with technical assistance or for technical co-operation to find the optimum solution to their individual problems. Solutions would be adjusted to the specific needs, e.g. of a shredder operator or recycling plant. The German company is further available to assist in the process implementation, including engineering and assembly. The respective consultancy is offered. Engineering companies are also potentially interesting partners to carry out joint engineering projects in the sector and to co-develop processes further.



## K matchmaking

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### ■ Company Profile

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Germany

Spectroscopy Solutions | solid-chem GmbH

### ■ Know-how / Expertise

DE-KH-54

<b>Title</b>	Comprehensive expert advice and problem solving in solid state chemistry for the polymer industry: Offering a service package that consists of consultation, execution and guidance in this field
<b>Detailed Description</b>	<p>Two German companies, that complement each other, offer combined analyses in the wide field of solid-state chemistry. These are especially cross-linked chemical analyses for solid state related problem solving based on spectroscopic and further experimental data such as thermo-chemistry and thermo-microscopy, KF water analyses and X-ray diffractometry. The companies are independent and were established by two experienced researchers from the University of Duisburg-Essen who collaborate to offer their combined expertise in the area of polymers and connected fields.</p> <p>□ The companies dispose of full-range equipment and instrumentation. They are thus able to face the challenges of demanding tasks and to solve special problems within the solid state chemistry of polymers with a team of committed and experienced colleagues. All issues can be treated confidentially as in contrast to the situation at Universities, both collaborating Professors are independent. Therefore there is no obligation to publish the results of the investigations.</p>
<b>Technical specifications</b>	Areas of application: Polymer and chemical industry; producing, research and development
<b>Main Advantages</b>	<ul style="list-style-type: none"><li>• □ The synergies of complementary expertise in analytical methods which is focused on problem solving.</li><li>• □ Problem solving by experienced experts</li></ul>
<b>Current State of Development of the Technology</b>	already on the market
<b>Intellectual Property Rights</b>	secret know-how
<b>Collaboration Details</b>	commercial agreement; technical agreement
<b>Type of Partner Sought</b>	Industrial companies seeking solutions, e.g. in quality control, maintain quality, and new applications
<b>The Specific Area of</b>	Polymer industry



## K matchmaking

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### Activity of the Partner

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### The Tasks to Be Performed of the Partner Sought

Analyses and evaluation

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## K matchmaking

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### ■ Company Profile

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Germany

University of Paderborn

### ■ Partner Search

DE-PS-90

**Title** Applied basic research and contract research in the sector of pastics and rubber

**Abstract** Applied basic research and contract research in the sector of pastics and rubber

#### Detailed Description

The KTP Kunststofftechnik Paderborn at the University of Paderborn focuses on the research and development of latest polymers, which are essential in modern engineering. Especially the procedural descriptions and analyses of polymer engineering processes are foundations for all developments. The KTP stands for thirty years of education and research and development of manufacturing processes in the field of polymers and rubbers. The expertise encompasses:

- the intensive co-operation with regional, national and international industrial companies and
- A main characteristic of the KTP is the close contact to the regional, national and international industry.

KTP does not limit its research tasks to basic university research, but also concentrates on demand driven contract research for partners from industry.

On the one hand KTP features the optimal adaption of processing performances to the technical requirements. KTP has developed application-oriented simulation tools for all fields of polymer processing. These software tools help to find solutions for problems quickly and allow higher process transparency. KTP offers on the other hand a broad variety of services in their local test bed infrastructure.

The main fields of activities besides joining, processing concepts and rheology are the below described competence fields:

- injection moulding focussing
  - Calculation of plasticizing units
  - Back flow valve (mould closing behaviour and wear behaviour)
  - Extra procedures (e.g. gas injection technique, 2K)
- extrusion focussing
  - Single and twin screw extrusion
  - Gear pumps
  - Extrusion of rubbers
  - Film extrusion

KTP highlights its simulation programmes for single screw, twin screw and rubber extruders. These programmes achieve a fast and reliable extruder design. KTP also focuses on the optimization of gear pumps for extrusion applications and for extra-applications within the rubber processing.

**Technical specifications** KTP offers a broad variety of services in the local test bed infrastructure:  
Methods applied in the testlab

- Mechanical Test Methods



## K matchmaking

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- Optical test methods and microscopic tests
- Physical and thermal test methods
- Thermoanalytical Research
- Rheological Analyses
- Testing the polymer component

Methods and processes applied in the weldinglab

- Heated Tool Welding
- Radiation Welding
- Spin- and Vibration Welding
- Ultrasonic-, High frequency- and Microwave Welding
- Glueing Technology

Opportunities and infrastructure in the Pilot Plant

- Extrusion Technique
- Injection Moulding Technique
- Raw Material Tests

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### Collaboration Details

partner search

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### Type of Partner Sought

Industry, universities, research institutes

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### The Specific Area of Activity of the Partner

Plastic and rubber processing, Machinery and equipment and services for the plastics and rubber industries

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### The Tasks to Be Performed of the Partner Sought

Participate in the co-operative project

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## K matchmaking

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### ■ Company Profile

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Germany

**Werner Langer GmbH & Co. KG Metall- und Kunststoffverarbeitung**

### ■ Co-operation Profile

DE-CO-71

#### Summary of company profile

Sophisticated industrial plastic parts

Our company is a manufacturer of sophisticated industrial plastic parts.

2- component and 2-colour die casting is in our range of products as well as metal insert molding. We work closely with our customers to select the best materials for the right application.

We offer:

- product development,
- design and mold department,
- die casting (0,01-1000g), all thermoplastic material
- post processing,
- assembly and warehousing.

Expertise and quality.

#### Objectives of desired contacts

#### Collaboration Details

distribution; supply; production



## K matchmaking

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### ■ Company Profile

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Germany

**Werner Langer GmbH & Co. KG Metall- und Kunststoffverarbeitung**

### ■ Technology Offer

DE-TO-77

#### Title

Knowhow in the construction of complex assembly groups in the plastics industry

#### Abstract

A German company offers a wide variety of services related to injection-moulding, including tool design and manufacturing as well as production. They have a special know-how in the construction of complex assembly groups from different materials (such as plastics and metal), needed e.g. for the construction of planetary gears. They are looking for customers for their standard product and services portfolio as well as clients interested in the joint development of complex, hand-manufacture

#### Detailed Description

A German company offers a variety of services in the plastics industry. Their standard services include:

- Construction of products and injection moulding tool – they install a complete universal solution, Unigraphics NX®, from UGS® in the CAD – CAM sector. They work with part advisor MoldFlow 7.2® for calculating the fill behaviour of the plastic parts.
- Tool construction: Precision machines such as CNC controlled and manual moulding machines, finishing presses, wire and vertical eroding machines and grinding machines etc. have since become standard in modern tool construction.
- Production on 40 injection moulding machines from 150kN to 4,500kN, mainly equipped with handling appliances or CNC controlled supply and removal automatons and 2K injection moulding processing guarantee a broad production spectrum. Finishing, ultrasound welding, pad printing, assembly, packaging and logistics services complete their range of services.

Their specialty is the production of complex assembly groups from different materials (such as plastics and metal). For example, for the storage technology sector, they develop and produce simple plastic parts, transport services, component holders and fully assembled braking rollers for pallet conveyors.

#### Main Advantages

- Wide range of standard services and products for injection moulding under one roof
- Cooperation with a qualified partner offering printing of products
- Special competence in the construction of complex assembly groups from different materials, e.g. planetary gears, which require maximum precision

#### Current State of Development of the Technology

already on the market



## K matchmaking

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<b>Intellectual Property Rights</b>	secret know-how
<b>Collaboration Details</b>	technical agreement
<b>Type of Partner Sought</b>	Industry
<b>The Specific Area of Activity of the Partner</b>	plastics
<b>The Tasks to Be Performed of the Partner Sought</b>	Joint development of complex, hand-manufactured assembly groups for new applications or contracting the German company's standard services

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## K matchmaking

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### ■ Company Profile

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Germany

WPK Kunststofftechnik GmbH & Co. KG

### ■ Co-operation Profile

DE-CO-66

#### Summary of company profile

Injection moulded products

There are always special demands with regard to synthetic components, be it in automobile engineering, in plants or in production technology. WPK develops and manufactures tailor-made solutions based on decades of know-how and high technical creativity. For more than 40 years, WPK has implemented competent and customer oriented projects ranging from prototypes to mass produced articles. Everything ranging from construction and mould construction to plastics injection moulding is catered for under one roof.

The results provide clear added value and advantages for the customers, in the shape of lighter, yet more robust construction elements and higher efficiency and durable quality. Modules conceived by WPK and developed and manufactured for post sorting facilities are the best example for this. A promotional unit can be seen in action at the WPK exhibition stand at the „K“.

#### Objectives of desired contacts

#### Collaboration Details

distribution; supply; project implementation



## K matchmaking

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### ■ Company Profile

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**Germany** ZENIT GmbH

### ■ Co-operation Profile

**DE-CO-78**

#### Summary of company profile

Information and Advice on Research Funding on national and EU level - FP7, CIP etc.

ZENIT GmbH, a non-profit public private partnership, offers consultancy services on FP7 and CIP related projects on behalf of the European Commission and the local Government of North Rhine-Westphalia.

Objectives of the services for researchers and entrepreneurs from North Rhine-Westphalia and partner regions in Europe are:

- \* to find new European R&D partners for FP7 projects,
- \* to spread information on participation procedures,
- \* to motivate especially small and medium-sized enterprises and universities to participate,
- \* to establish new R&D co-operations,
- \* to support the consortia during the negotiation phase and in the project phase.

K visitors and K exhibitors are invited to become involved in established and new technology networks between researchers, entrepreneurs and multipliers related to FP7 and CIP.

The services are free of charge.

#### Objectives of desired contacts

#### Collaboration Details

research and development; project development; others

Initiation of research and development projects on EU level, especially FP7 and CIP



## **K matchmaking**

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*Business Support at Your Doorstep*