

The Fraunhofer IWU in Profile

Institute for Machine Tools and Forming Technologie



Fields of expertise

- Machine Tools
- Mechatronics
- Cutting Technologies
- Forming Technologies
- Joining Technologies
- System Technology
- Virtual Reality
- Process Control Engineering

in close cooperation with

- Universities, research institutes
- Machine tool industry
- German and international automobile industry
- Ancillary industry (forming, cutting, tool and die making)

IWU's project ideas for the following Calls – FoF.NMP.2012 (1)

FoF.NMP.2012-1 Adaptive production systems and measurement and control equipment for optimal energy consumption and near-to-zero emissions in manufacturing processes

IWU idea: Smart learning factories ensuring energy and resource efficiency

FoF.NMP.2012-2 Methodologies and tools for a sustainable predictive maintenance of production equipment

IWU idea: Methodologies and tools for a sustainable predictive maintenance of production equipment

FoF.NMP.2012-4 New high-performance manufacturing technologies in terms of efficiency (volumes, speed, process capability, etc), robustness and accuracy

IWU idea: 1 Compensation and correction of process and operation related workpiece deformations using adaptive structures

IWU idea: 2 Development of a process integrated grinding control for the mass production of high precision components

IWU's project ideas for the following Calls – FoF.NMP.2012 (2)

FoF.NMP.2012-5 High precision production technologies for high quality 3D micro-parts and micro topographies

IWU idea: Process combination in toolmaking for mass volume structuring of 3D micro fluid parts with complex internal structures

FoF.NMP.2012-6 Knowledge based tools and approaches for process planning and integrated process simulation at factory level

IWU idea: Flexible processing of individualized products in ad-hoc production networks

FoF.NMP.2012-7 New technologies for casting, material removing and forming processes

IWU idea: Cast Forging – A new material and energy efficient process combination

IWU's interest in contributing to the following Calls

| Identifier | Topic |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NMP.2012.2.1-1 | Joining dissimilar materials, excluding applications specific only to healthcare |
| NMP.2012.2.2-4 | Cost-effective materials for larger blades for off-shore wind energy applications |
| AAT.2012.1.1-2 | Advanced concepts and technologies for increased and optimised use of light-weight metallic, composite materials, including metal laminates, in primary structures; advanced concepts and techniques for application of 'smart' materials, multi-functional materials, micro and nano-technologies; aero-elasticity, 'smart' structures and morphing airframes |
| AAT.2012.1.1-4 | Advanced concepts and technologies to enable the all-electric aircraft, reducing engine bleed and systems weight) |
| AAT.2012.4.1-5 | Development of advanced 'intelligent' knowledge-based manufacturing and assembly processes and technologies with increased degree of automation |
| AAT.2012.4.x-x | Integrated approach to lean manufacturing of composite and hybrid aircraft / engine structures. |
| GC.SST.2012.7.1-1 | Innovative materials for the next generation of environmental friendly cars and commercial road vehicles (Level 1) |
| GC.SST.2012.7.1-5 | Modelling and testing for improved safety of alternatively-powered vehicles (Level 2) |
| GC.NMP.2012-2 | Innovative advanced lightweight materials for the next generation of environmentally-friendly electric vehicles |
| FoF-ICT-2011.7.1 | Smart Factories: Energy-aware, agile manufacturing and customisation |
| FoF-ICT-2011.7.2 | Manufacturing solutions for new ICT products |

Archivierungssangaben

Partners we are looking for...

- **Industry partners, SMEs**
to contribute demonstrators and validate our research
- **Manufacturers**
- **Sectors:**
Automotive
Aviation and Transport
Medicial Engineering
Supply industry (forming, casting, cutting and tool making...)

Thank you!

If you are interested in working with us, please contact:

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