

NoAE Innovations-Competition 2011

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Topic-Cluster 3: Materials & Manufacturing	
Description	New/Eco Materials - and an optimal manufacturing process/life cycle in mobility industries
Materials and Light weight construction	<p>Eco-Life cycle for Materials</p> <ul style="list-style-type: none"> • The entire life span of a product or material from raw materials to disposal • Eco-materials and renewable materials • Eco building materials <p>Function and Combination of Materials</p> <ul style="list-style-type: none"> • Materials for higher reactivity • New materials for new functions • Bio-degradable materials • Carbon-based materials • Material and product innovation for customised seals and polymer components • Improved material efficiency and recycling potentials/concepts • New material combinations for e.g. aluminium-magnesium or plastic/metal • Applications for high-performance thermoset and thermoplastic materials • New surface structures <p>Light weight construction</p> <ul style="list-style-type: none"> • Lightweight materials and lightweight construction <p>Recycling</p> <ul style="list-style-type: none"> • Recycling considerations

	<ul style="list-style-type: none"> • Recycling of carbon-based materials
Manufacturing	<p>Eco-Life cycle for Production</p> <ul style="list-style-type: none"> • To look at or design a product or material from the beginning to the end of its life to assess the environmental standards and the impact it made on the environment: raw material, manufacturing, end product, use, reuse, recycling, disposal • Optimisation of the CO2 balance in production <p>Methods for production</p> <ul style="list-style-type: none"> • Open manufacturing • Energy efficient manufacturing methods • New manufacturing methods without hard tooling (for low-to mid level production volumes) <p>Value Chain Applications</p> <ul style="list-style-type: none"> • New production processes/methods for the entire value chain • Human robot cooperation/interaction • New production processes for alternative powertrains e.g. in the electric motor, batteries <p>Quality and Testing</p> <ul style="list-style-type: none"> • Improved methods for zero-failure production to save resources • New safeguard processes for an increase in quality • Testing methods for alternative powertrains (e.g. high-voltage technology) <p>Value Chain Applications</p> <ul style="list-style-type: none"> • New production processes/methods for the entire value chain • Human robot cooperation/interaction • New production processes for alternative powertrains e.g. in the electric motor, batteries
Where are	Universities and Research Institutes

innovations found?	<ul style="list-style-type: none">• University and research facilities• Research institutes Companies <ul style="list-style-type: none">• Entire value chain from level n to OEM in automotive, transportation and aerospace industries
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