

SUSTAINABLE SURFACE PROTECTION BY GLASS-LIKE HYBRID AND BIOMATERIALS COATINGS

Biobased value chains in an emergent context



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ZSI

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Replace PFAS coatings by developing bio-based alternatives:

- Develop sustainable surface protection by glass-like hybrid and biomaterials coatings
- Provide a SSbD manufacturing approach

3 Case studies / BIO-SUSHY Solutions:

Food tray coatings



Textile coatings



Cosmetic glass coatings



SSbD: *Holistic focus on topics like resilience, sustainability, responsibility*

Attention for issues such as...

...responsible sourcing...

...general due diligence...

...sustainable production & consumption...

...which are to be integrated *as much as possible & as early as possible* in the development of new value chains



Aim: Build social acceptance from a perspective of social innovation

Approach: Social Innovation

→ Focus on **interlinked** character of technology and society

→ **Constructively** enable transformations by making ethical, sustainable, and socially conscious practices **inherent to** development processes



Topic of PFAS replacement:

Characterized by mix of technological and societal
insecurities, unpredictabilities & unknowns

Identifying & mitigating barriers for social acceptance

Volatile conditions BIO-SUSHY coatings, major examples:

- Rapid developments regulatory context
→ e.g. effects of ban specificities
- Public attention & PFAS controversies
→ e.g. difficult balance between stakeholder groups
- Technology readiness level vs. societal needs
→ e.g. scaling up innovations
- Resilience global value chains
→ e.g. increased competition on sustainable solutions



Social acceptance & public trust in a volatile context

Include wide range of value chain actors

- Quadruple helix understanding of innovation ecosystems
- Understanding concerns regarding uptake of coatings
- Empowering co-design early in development process

Draw connection to broader socio-economic context

- Environmental pollution & public health
- Social context & public trust
- Regulatory developments
- Trends in the chemical & coatings industry
- EU policies ind. growth, innovation & sustainability

Unpacking & understanding controversies

- Understanding how controversies (re-)frame technological solutions
- Motivations behind public risk-perception
- Anticipating future developments for social acceptance

Integrative strategy for social acceptance

- Developing connections to existing (successful) initiatives on sustainability
- Explicating leverage points for social innovation in the specific domains



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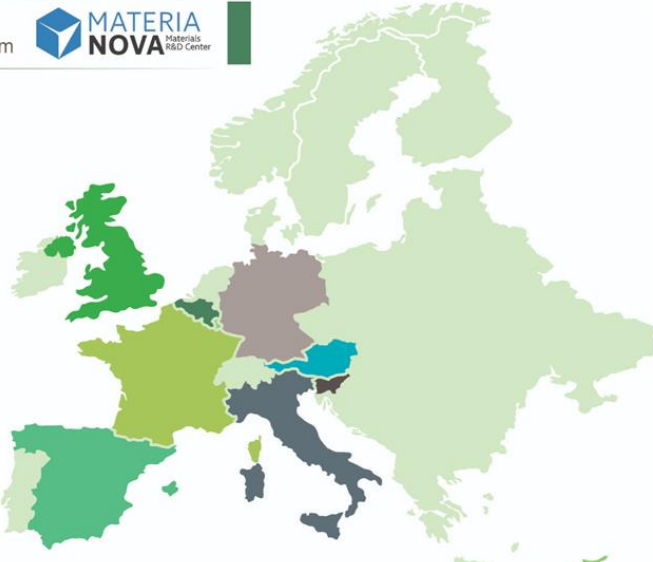
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MATERIA NOVA Materials 2500 Center

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THANK YOU!



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