ForestValue call proposal

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  – Biotechnical Faculty (UL-BF)
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• **Extractives of wood and bark**
  – Selection and preparation of material,
  – extractions,
  – separation, identification, isolation and purification of compounds,
  – biological activity of compounds, and
  – application of extractives: wood protection, coating systems, fibre and NC functionalization, food applications, packing materials…

• **Nanocellulose (NC)**
  – Production of NC,
  – functionalization of NC,
  – characterization (microscopy, thermal analysis, spectroscopy, X-ray diffraction, rheology…), and
  – application of NC (synthetic and bio-composites, hydrogels, aerogels, various films…).

• **Other fields of interest**;
  – Wood biology, the decomposition of biomass, the properties of woody and other lignocellulosic biomass, the modification of wood, bio-nanocomposites, and the applications in wood- and related industries.
The idea of our proposal is to valorise the low-quality woody biomass through the isolation of high-value derivatives, which will be used for the improvement of the properties of existing materials and for the development of innovative bio-based materials that have the potential for the application in wood- and related industries. Main goals:

- characterization and selection of low-quality woody biomass,
- development of an efficient and improved isolation method(s) for extractives and nanocellulose,
- development of the valorisation of processing side streams, lignin and hemicelluloses, for chemicals (aromatics, furans and levulinic acid compounds), resins (melamine, urea...) & coatings,
- development of new extractive-based fungicidal system, and
- development of innovative bio-composites, based on various NC types, extractives, and natural or synthetic polymers.

**Partner search.** We are searching for the partners with expertise in:

- wood characterization,
- testing of the biological activity of compounds, and
- NC composites’ fabrication.

- Industrial partners from the corresponding fields are desired!