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【124】Chemical and structural characterization of tannin-furanic foams using X-Ray micro-CT, FTIR imaging and UV Resonant Raman scattering

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Tannin-furanic foams are green lightweight materials, presenting quite good compression resistance and thermal insulation, and being suitable as a wastewater treatment agent, therefore getting more attention as alternatives to oil-based lightweight materials. Within the Interreg V-A Italy-Austria project ITAT1059 InCIMa4, and within the CERIC proposal 20217081, mechanically and structurally improved tannin-furanic foams have been characterized by the complementary use of infrared spectroscopy and UV Resonance Raman spectroscopy to study similarities and differences in their chemical structures. Additionally, their internal tridimensional micro-architecture was investigated by synchrotron radiation computed micro-tomography (SRμCT) to assess porosity based on the relative abundance of voids, demonstrating differences in pore network and pore size distribution.

Theoretical Work

Author: Dr MUSSO, Maurizio (University of Salzburg, Department of Chemistry and Physics of Materials)

Co-authors: Dr BEDOLLA, Diana (Elettra - Sincrotrone Trieste S.C.p.A.); Dr D'AMICO, Francesco (Elettra - Sincrotrone Trieste S.C.p.A.); Dr SACCOMANO, Giulia (Elettra - Sincrotrone Trieste S.C.p.A.); Dr VACCARI, Lisa (Elettra - Sincrotrone Trieste S.C.p.A.); Dr BERGER, Raphael J.F. (Department of Chemistry and Physics of Materials, University of Salzburg); Prof. SCHNABEL, Thomas (Forest Products and Timber Construction Department, Salzburg University of Applied Sciences); Dr SEPPERER, Thomas (Forest Products and Timber Construction Department, Salzburg University of Applied Sciences)

Presenter: Dr MUSSO, Maurizio (University of Salzburg, Department of Chemistry and Physics of Materials)

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