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【231】 Material characterization with positrons - Unique and complementary insights

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The functionalizing of downscaled solids by precise engineering of small defects, voids, porous structure and the amount, distribution and connectivity of such is a vibrant field of research and in demand of improved descriptors to successfully discriminate the increasing complexity. Positron Annihilation Spectroscopy (PAS) as a non-destructive method employing the unique sensitivity of the annihilation characteristics of positrons to their immediate electronic environment on the nanometer scale hereby yields complementary insight to established techniques. Acting as a dynamic local probe, positrons are able to resolve the smallest structural features in various depth and concentrations. We present recent breakthroughs in the characterization of hierarchical porous materials and highlight other high-impact applications with PAS.

Author: GERCHOW, Lars (ETHZ)

Co-author: Dr CRIVELLI, Paolo (ETH Zurich (CH))

Presenter: GERCHOW, Lars (ETHZ)

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