

Correlative Dynamics of Filamentous Fungal Adhesion on Anti-Fungal Paint and Polyester Surfaces using Synchrotron Macro ATR-FTIR Microspectroscopy

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Fungal colonisation of different indoor and outdoor substrata is one of the common issues that causes damage and degradation of metallic surfaces. It can be a source of infection for immunocompromised and/or sensitive individuals. In this study, we investigated the initial conidia attachment dynamics of three fungal strains, including *Aspergillus niger* ATCC 9642, *Aureobasidium pullulans* ATCC 9348 and *Epicoccum nigrum* ATCC 42773 on (i) polyester coated surfaces and (ii) polyethylene terephthalate-coated paints. The biochemical information of the initial conidia attachment, particularly saccharides, proteins and lipids, was characterised using synchrotron macro ATR-IR microspectroscopy and correlated with their physical appearance from SEM analysis. The results obtained indicated that during initial interactions with surfaces, the saccharide composition played a significant role in facilitating fungal colonisation on these surfaces. This study also demonstrated synchrotron macro ATR-FTIR as a powerful analytical tool for gaining a better understanding in the filamentous fungal adhesion on these specific surfaces.

Level of Expertise

Experienced Researcher

Do you wish to take part in the poster slam

Yes

Travel Funding

Yes

Speakers Gender

Male

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