

Abstract Submitted  
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**AFM, SEM and EDX study of morphology, elemental composition and spore surface stiffness/elasticity measurements for *Hypocrea* and *Phomopsis* spores.** BRITTANY GANTHER, Lock Haven University of Pennsylvania, EKATERINA YARUNOVA, Bloomsburg University, BARRIE OVERTON, INDRAJITH SENEVIRATHNE, Lock Haven University of Pennsylvania — Surface morphology of *Hypocrea* and *Phomopsis* spores were investigated with contact and non contact mode Atomic Force Microscopy (AFM). Scanning Electron Microscopy (SEM) and Energy Dispersive X ray Spectroscopy (EDX) are used to quantitatively measure the rodlet composition and elemental composition variations at different stages. Size characteristics indicate *Hypocrea* to be 3 – 4  $\mu\text{m}$  in diameter and *Phomopsis* to be 2 – 3 $\mu\text{m}$  in diameter, from High resolution AFM and SEM images. *Hypocrea* conidia are unprotected and produced on conidiophores exposed to environmental conditions while *Phomopsis* conidia are protected with in a pycnidium. It can be hypothesized that spore surface stiffness measurements and elastic moduli of these two spores should give different values as an evolutionary response. Spore surface stiffness and elastic moduli measurements by nanoindentation obtained from force curve method in contact mode AFM will be discussed. The chemical composition variation of the spores, pre and post germination will also be discussed.

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