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Title: Multiple-layered effective medium approximation approach to modeling environmental effects on alumina passivated highly porous silicon nanostructured thin films measured by in-situ Mueller matrix ellipsometry

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- Optical changes in alumina passivated highly porous silicon from SCTFs during controlled exposure to toluene vapor are reported
- Inspection of individual Mueller matrix elements show sensitivity to adsorption
- Adsorption of toluene into void region between nanostructures cannot be described with a single inhomogeneous layer
- Multiple-layer effective medium approximation approach is necessary

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