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Native oxide formation on Compound Semiconductors

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The inhomogeneous (Ga-O, As-O) native oxide on the GaAs surface has been formed upon exposure to air at room temperature. For (Al, Ga)As compound semiconductor, the airgrown native oxide on (Al, Ga)As has been found to have inhomogeneous distribution of aluminum by Auger Electron Spectroscopy(AES). For CdTe, the surface has been very inert and the airgrown native oxide has (Cd-O, Te-O) bonding and it is believed to be CdTeO₃. For the native oxides on either CdTe or GaAs surface, those can be removed by the deionized(DI) water only, while the airgrown native oxides formed on the ternary compound semiconductor (Al, Ga)As and (Cd, Mn)Te would not be removed by DI water rinsing only.