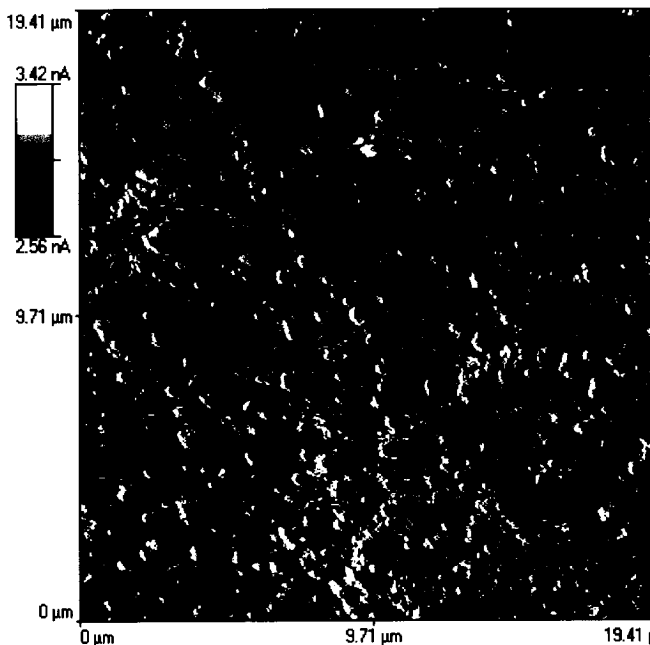


Imaging of Precambrian microfossils by Atomic Force Microscopy (AFM)

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Next to light, Transmittance and Scanning Electron Microscopy, which are standard procedures in searching for and imaging of the Earth' earliest microfossils, the Atomic Force Microscopy (AFM) is being developed as a tool in investigations of the origin of life. Scanning of polished and HF- etched, fossiliferous thin sections, containing demonstrably preserved cyanobacterial and bacterial filaments and coccoids, offers a possibility of resolution up to molecular level. Recognition of microbial remnants, orders of magnitude smaller than sheets or coccoids, and molecular sampling, by the tip of the scanning atomic probe, are possible.



Walls of a 10 μm wide cyanobacterial filamentous sheath are visible. The walls are <1 μm across and constitute of carbon particles, as can be proven by light microscopy and microprobe analyses. PPRG sample no 1289, 2100 Ma old Gunflint Fm. (Schopf & Klein, 1992).