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Alignment of metal-coated nanotube tips and application in AFM imaging of cells ZHIFENG DENG, ERHAN YENILMEZ, AMY REILEIN, JOSH LEU, KATHRYN A. MOLER, HONGJIE DAI — We demonstrate a reliable method to precisely control the direction of metal-coated nanotubes by exposing them to Ga ions in a Focused Ion Beam. With this method, many metal-coated carbon nanotubes on AFM tips are aligned to a desired direction. Equipped with high aspect-ratio nanotube tips, which are almost perpendicular to the sample surface, we imaged basal cell membrane of polarized Madin Darby Canine Kidney cells in an AFM. Very steep (greater than 80 degree to sample surface) and high (more than 300nm) features in these images illustrate the ability to image high aspect-ratio features with well-aligned nanotube tips.

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