

# FIB in Life Sciences

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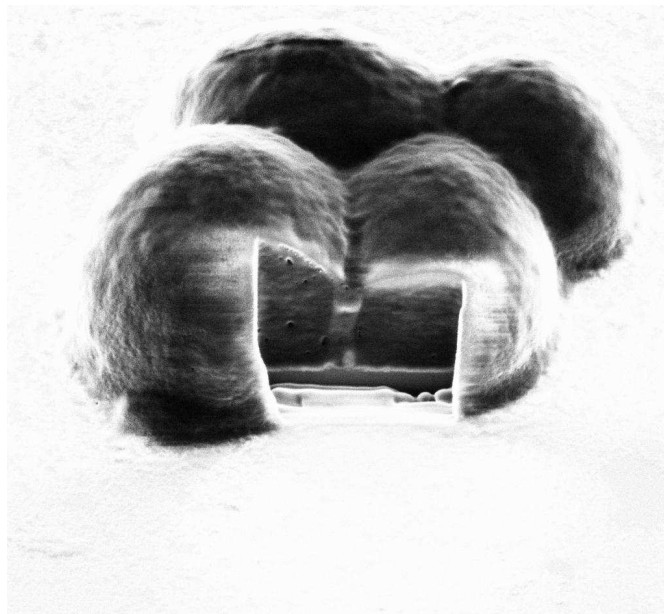
<sup>‡</sup> also: Consorzio Milano Ricerche, Milano (I)

The FIB technique of microscopy and nanomachining, that is widely spread in semiconductor technology, is reshuffled to open new horizons in the field of life sciences at cellular and subcellular level.

The proposed technique can be reasonably inscribed in the field of “nanobiotechnologies” and be structured in three different and interplaying set of operations: ultramicroscopy, tomography and biological manipulations of cells and cell membranes at the nanoscale.

Information is thus provided on cell characterization, cell division time sequence, inner structures and membrane structural properties.

It has been therefore proven that FIB allows easy target cell selection, fast operation, high resolution, 3D imaging and sample manipulation during imaging and it represents therefore a revolution in ultramicroscopy in the biological field.



FIB Images of two adhering yeast cells after being cut by the ion beam. It is possible to see inner structures of yeast, details of the membrane-wall complex, details of the adhesion of cell to substrate. The precision of the orthogonal planes sectioning can be appreciated, together with the resistance of the cellular structures to the vacuum chamber operation.