

## Sectioning bone with Rowiak TissueSurgeon: Quality of sections is equal to ground sections

Heiko Richter, Rowiak GmbH, Hannover

### Introduction

The preparation of ground sections of bone is an elaborate, time consuming process. For histological research, surfaces of ground sections have to be totally even and coplanar, especially for examination in phase-contrast and polarized light. Sample thickness in ground sections is achieved by approximation only. Rowiak TissueSurgeon is ought to save these complicated, time consuming processes with constant quality. Sample dimensions can be controlled by Optical Coherent Tomography (OCT).

### Material and Methods

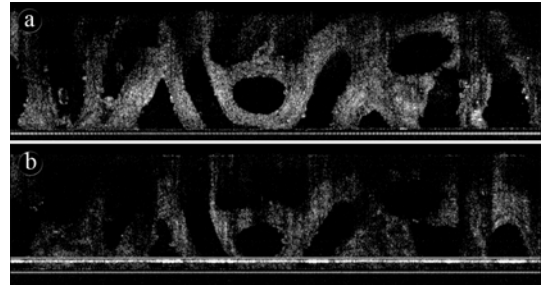
Archeological human bone (Radius and Os parietale), embedded into Biodur resin were mounted on microscope slides with Epo-Tec (Polytec, Waldbronn, Germany) and cut with Rowiak TissueSurgeon at 70  $\mu\text{m}$  and cover slipped. Cutting was documented with equipped OCT. The samples were examined with Zeiss Axioscope in transmitted light in phase contrast mode and polarized light.

### Results

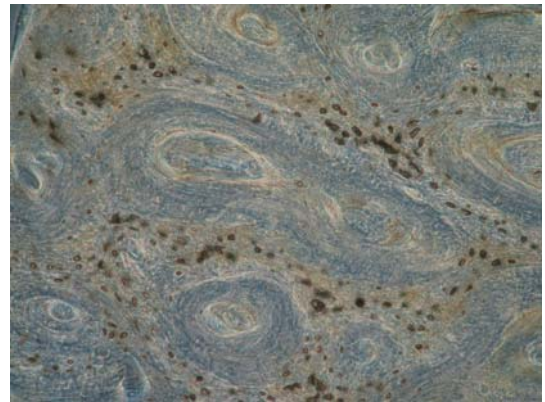
Sectioning of bone with Rowiak TissueSurgeon can be controlled with equipped OCT (Fig. 1). Samples show equal quality compared to conventional ground sections (Figs. 2-3). Surfaces are totally even.

### Conclusion

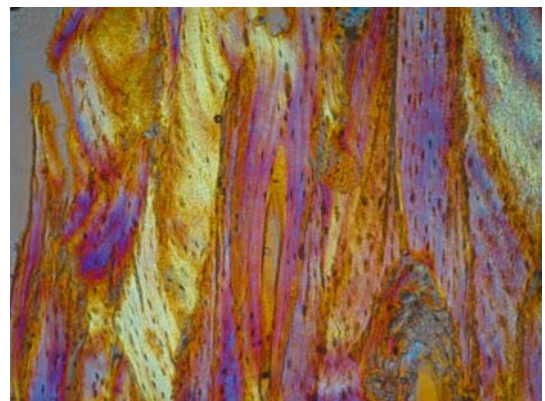
With Rowiak TissueSurgeon it is possible to prepare sections of bone that are of equal quality compared to conventional ground sections. Rowiak TissueSurgeon saves a lot of time as complicated steps in conventional preparation are not necessary anymore.



**Fig. 1:** OCT image of archeological bone. **a)** before section with Rowiak TissueSurgeon, **b)** after section.



**Fig. 2:** Cross section of Radius, phase contrast



**Fig. 3:** Longitudinal section of Os parietale, polarized light