

LLS ROWIAK LaserLabSolutions Services: Histology and Material Analysis

The TissueSurgeon is designed to cut thin sections for microscopy without prior laborious preparation. Samples range from native tissue, embedded tissue, hard tissue to materials. We offer full histology and microscopy service, especially for samples which are hard to cut with mechanical methods:

Thin Sections for Histology

We offer to cut your tissue, organ, biopsy or sample according to your needs:

- Sections of native tissue samples
- Sections of embedded tissue samples (except paraffin embedding)
- Sections of non-decalcified hard tissue
- Sections of samples containing biomaterials or implants

Material science

LLS ROWIAK LaserLabSolutions TissueSurgeon is also suitable for cutting non-metal materials for microscopy

- Polymers for polarized light microscopy
- Calcium based materials like ceramics
- Even diamonds can be cut with TissueSurgeon

Tissue treatment and embedding service

The TissueSurgeon can cut without embedding. Nevertheless, sometimes sample treatment is necessary. We offer fixation and/or embedding service with the right medium for your special sample. Alternatively, we offer embedding protocols customized for the TissueSurgeon to embed in your own lab to get the best results for you:

- Native sectioning
- Fixation of tissue with the right solution
- Tissue embedding according to application (epoxy resin, MMA, ...)

Staining Service

All common staining protocols are available. Standards are:

- Haematoxilin & Eosin
- Tolluidine blue
- von Kossa staining for calcified tissue
- Giemsa staining
- Staining for fluorescence microscopy (i.e. DAPI)
- Other staining protocols on request

Imaging and documentation

- 3D deep tissue imaging with Multiphoton Microscopy before cutting
- Optical Coherence Tomography for monitoring of cutting process and quality control
- Histological documentation of sections in transmitted light, phase contrast and fluorescence mode



Fig. 1: Member of LLS ROWIAK LaserLabSolutions staff preparing histological sections with TissueSurgeon

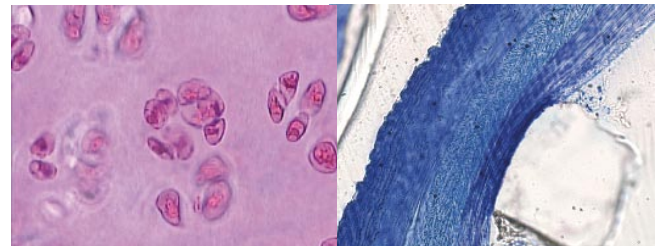


Fig. 2: Soft tissue applications: cartilage (H&E staining, left), stenosed coronary artery (SRS staining, right)

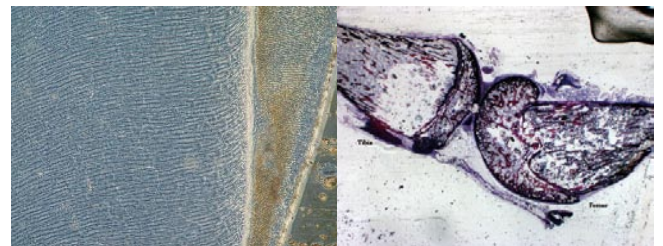


Fig. 3: Hard tissue applications: human tooth (phase contrast, left), rat tibia (H&E staining, right)

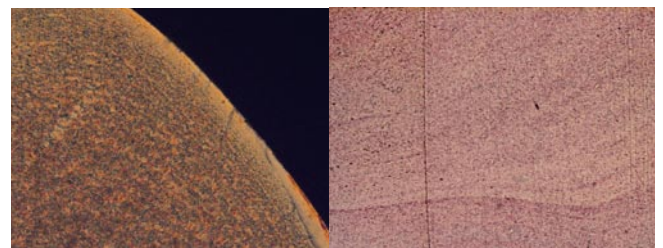
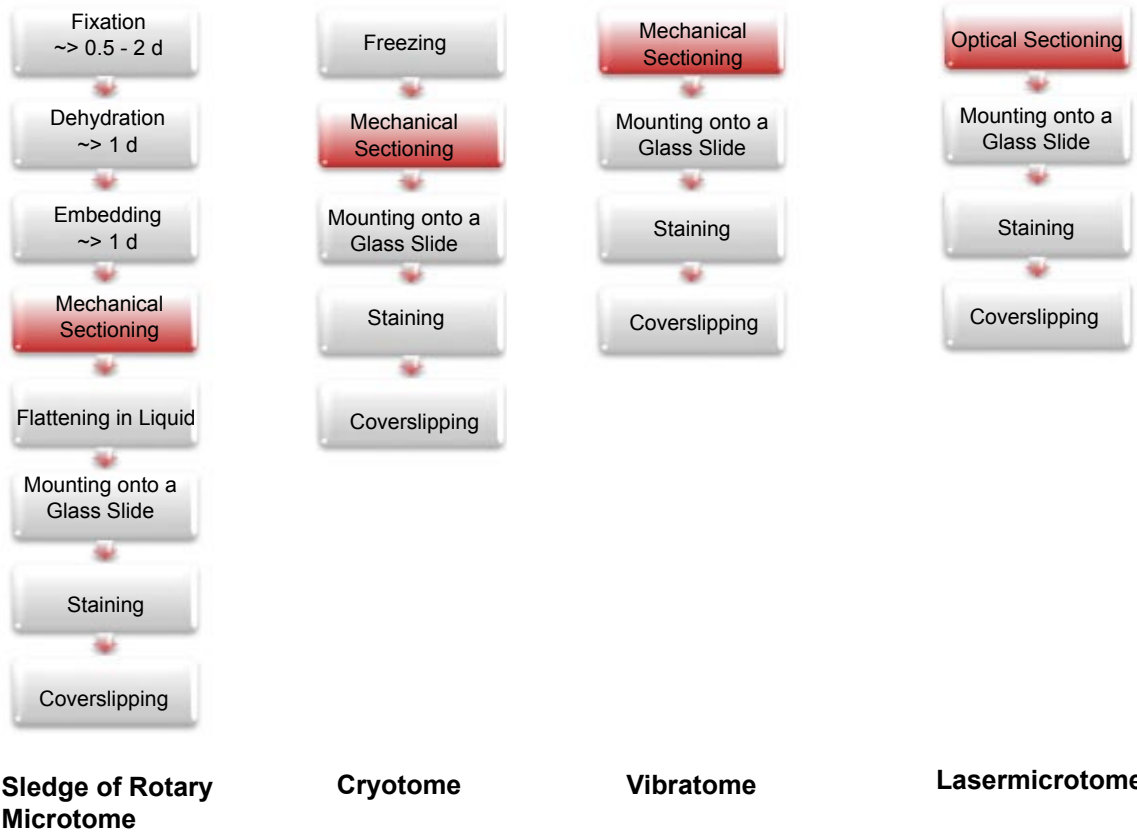


Fig. 4: Material science tissue applications: POM (polarized light, left), LSR (transmitted light, right)

Use our laser systems together with our expertise as a service!

LLS ROWIAK LaserLabSolutions Services: Comparison of TissueSurgeon vs. Conventional Microtomy

Microtomy - Soft Tissue Sample Preparation



Microtomy - Hard Tissue Sample Preparation

