

ΕΘΝΙΚΟ ΚΑΙ ΚΑΠΟΔΙΣΤΡΙΑΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ
NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS

ΟΔΟΝΤΙΑΤΡΙΚΗ ΣΧΟΛΗ

ΤΟΜΕΑΣ ΒΑΣΙΚΩΝ ΕΠΙΣΤΗΜΩΝ ΚΑΙ ΒΙΟΛΟΓΙΑΣ

ΣΤΟΜΑΤΟΣ

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SCIENTIFIC INSTRUMENTATION

(V11-23/GE)

1. Optical microscopes:

DM 4000B/Leica (Transmission/reflection/polarizing/fluorescence microscope with *Leica DFC420C* digital camera).



ME 600 Eclipse/ Nikon (Metallographic, transmission/reflection/polarizing, with universal objectives, high resolution microphotography system *U-III/Nikon* and *Leica EC3* digital camera).



STM/ Olympus (Transmission/reflection digital micro-measuring microscope).



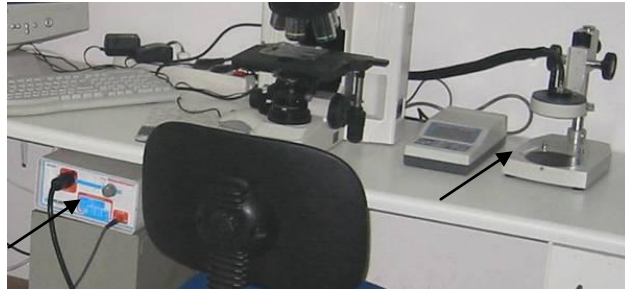
M80/Leica (Transmission/reflection stereomicroscope, with uniaxial, coaxial and lateral LED illumination and *Leica DFC295* digital camera).



Elvar/Leitz (Stereomicroscope, with *Leica CLS 100 X* uniaxial and lateral fiber-optic illumination and *Coolpix 990/Nikon* digital camera).



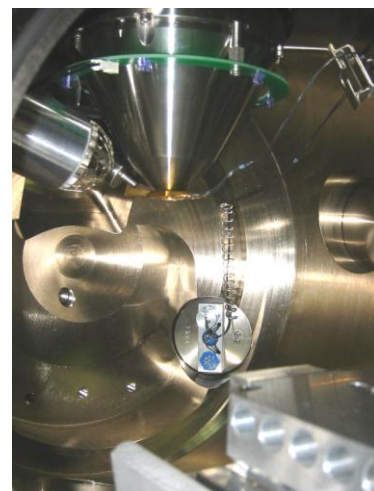
Micro-Scopeman/Moritex (Portable video-microscope, with uniaxial fiber-optic illumination, contact and non-contact lenses).



2. Scanning Electron Microscope/EDS x-ray microanalysis unit:

Quanta 200/FEI (Variable pressure SEM for high-vacuum, low-vacuum and environmental imaging, with stage for controlled hydration/dehydration studies, secondary and backscattered electron detectors for imaging under all conditions and dedicated software for production of colored images by combining secondary and backscattered images).

Bruker Quantax 200 (energy-dispersive X-ray spectroscopy system with Flash 6/10 liquid nitrogen-free Si-drift detector for element detection down to ^4Be , and software for fast elemental mapping, quantitative mapping, line scan analysis, particle analysis etc).



SCD 004 Sputter-Coater/Bal-Tec (Au and C coating unit for high-vacuum imaging and analysis).

CPD 03 Critical Point Drier/ Bal-Tec (for selective, delicate, soft-tissue treatments when high-vacuum imaging is required).



3. Computerized X-ray microtomography system:

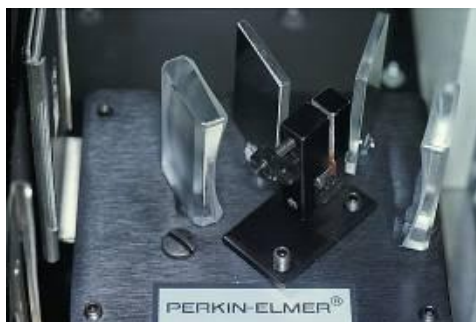
1072 High resolution x-ray micro-CT scanner/SkyScan (non-destructive section imaging, 2D- and 3D- reconstructions, 3D studio animation software for production of video images and software for linear, 2D- and 3D- measurements).



4. Spectrometers:

Spectrum GX FTIR spectrometer/ PerkinElmer (with a variety of accessories for surface characterization including micro-MIR, micro-ATR, angle-resolved ATR and IR polarizer).

AutoImage FTIR Microscope /PerkinElmer (FTIR transmission/reflection microscope for molecular microanalysis and imaging, molecular mapping and line scan analysis. Moreover, the unit is equipped with a micro-ATR objective, visible polarizers etc).



Lambda 35 UV-Vis spectrometer/ PerkinElmer (with a 50 mm integrated sphere for total transmittance and diffuse reflectance measurements, including colorimetry software)

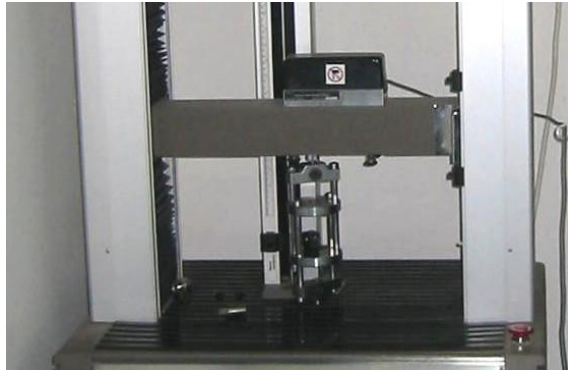


RamSpec Raman spectrometer/BaySpec (portable fiber-optic based Raman spectrometer with microscope attachment, and probes- \varnothing : 6mm and 1.2 mm- for in vivo skin and tooth analysis. The 6 mm probe can be connected to the Nikon Eclipse ME 600 microscope for microanalysis).



5. Universal Testing Machine:

Tensometer 10/Monsanto (upgraded with *Aegis 10/EUCAT* system, PC-controlled with a variety of attachments for tension, compression, bending, shear, fatigue, uniaxial and multiaxial testing).



6. Hardness Testers:

HM 2000/Shimadzu (Vickers and Knoop indenters).



Diatronic 2RC/Wolpert (Vickers, Brinell and Rockwell indenters).



7. Profilometers

DH-5 Diavite Stylus Profilometer/Asmeto (with micro-controlled x,y stage, 2 devices).



Wyko NT 1100 Optical Profiler / Veeco (including PSI and VSI objectives, with computer-controlled stage and software for full 2D- and 3D- imaging and roughness parameters measurement plus image stitching capacity for big specimens).



8. Color/Gloss measuring devices:

Micro-Color Data Station/ Dr. Lange (portable L*a*b* colorimeter).



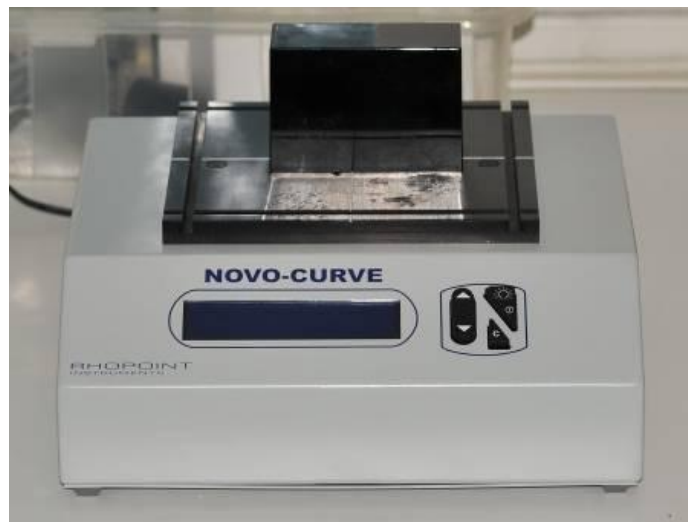
Vita Easyshade V/Vita (intraoral colorimeter).



H330 AA Gloss meter/Horiba (portable gloss-meter).



Novo-Curve Gloss-meter /Rhpoint (bench-top device for small and curved surfaces).



9. Accelerated aging systems:

Heto (PC-controlled thermal-cycling unit with robotic arm, cold and hot water baths).

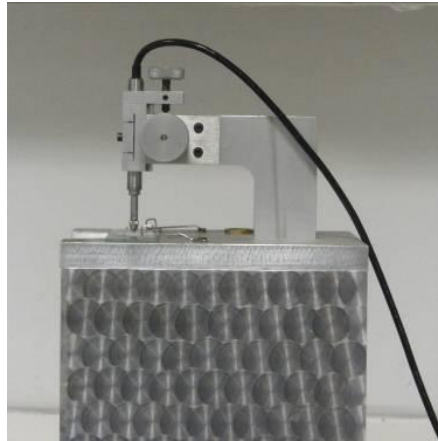


Suntest 30 CPS Plus/Atlas (photo-aging unit, fully programmable).

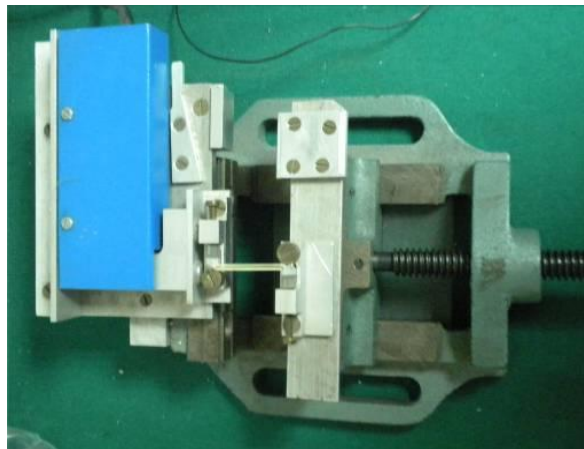


10. Stress/strain measuring devices:

Setting shrinkage measuring device, PC-controlled with LVDT (*Solartron*) and A/D converter (*Pico*).



Elastic recovery measuring system, PC-controlled, with load cell (K5) and A/D converter (*Pico*).



Stress analysis system/Bruel & Kjaer (stress measurements/strain gauges, including frequency generator and oscilloscope).



11. Contact angle goniometer

Ossila L2004A1 (Goniometer for contact angle and surface tension measurements with software for recording and analysis)



12. Specimen preparation devices:

Microtome 2/ Metals Research (metals microtome).

Isomet 100 /Buehler (hard tissue microtome).

Ecomet III/Buehler and **DP12/Struers** (metallographic polishing units).

Leica EM TXP Target Surfacing System (milling, sawing, grinding system)

EMO (dental unit).

Ultramatic 150/LM (ultrasound bath).

Cyclarc 2/Morita (Titanium casting machine).

Morita Digital micrometer (0-25mm)



13. Chemical labware:

P903/Consort (digital pHmeter/ionometer with standard, mini and surface pH-electrodes and Ca and F selective ion electrodes).

Genie 2 (vortex homogenizers/vibrators).

Nuova/Thermolyne (Magnetic stirrers).

BP 310S/Sartorius (electronic balance).

AU200/Shimadzu (analytical balance).

Memmert (dry heat ovens, 5)

Heraeus (vacuum oven)

Hartmann (bench-top centrifuge)

14. Special light sources:

-Various dental light-curing units

-IR units

-UV units (*UVL-21/Black-Ray*).

15. Miscellaneous/Auxiliaries:

-A variety of custom-made devices for testing dental materials according to ISO specifications.