

Methods, IPC, Weber

<h1>EPR-Spectroscopy</h1> <p><i>Electron Paramagnetic Resonance</i></p>	Model: Bruker E680W/X Unit and Room: Physical Chemistry, 5th floor, R. 503b Responsible: Prof. Dr. Stefan Weber (203-6213) Further information: http://www.physchem.uni-freiburg.de/akweber/forschung/eprfolder/index.html
<p>Short Description:</p> <p>Continous-wave/pulsed EPR-Spectrometer operating at X-band (9–10 GHz) and W-band (94–96 GHz) microwave frequencies.</p> <p>Available Experiments/Techniques:</p> <p>all currently available pulsed and continuous-wave methods, including pulsed electron–nuclear double resonance (ENDOR), pulsed electron–electron double resonance (PELDOR, DEER), and transient EPR (TREPR)</p>	<p>Picture of the Equipment</p>
<p>Special Equipment:</p> <p>Low temperature unit (cryostat/resonator) for temperature range from 5 to 300 K. Optical sample excitation (pulsed Nd:YAG/OPO laser system: 430–800 nm, 6 ns pulse length, <10 Hz laser pulse repetition rate) Goniometer for measurements of oriented samples (single crystals, liquid crystals)</p>	
<p>Measurements on the equipment are currently done by:</p>	<p><input type="checkbox"/> Students <input type="checkbox"/> Students after Introduction <input checked="" type="checkbox"/> Students after extensive training <input checked="" type="checkbox"/> Trained scientific service personal</p>
<p>Recent Publications, where this instrument was important (optional): Give citation</p>	<p>FEBS J. 276 (2009) 4290–4303; J. Phys. Chem.B 112 (2008) 3568–3574</p>
<p>Typical problems that may be solved with this instrument:</p>	<p>– <i>identification of radicals</i> – <i>electronic structure determination of paramagnetic centers (organic radicals, transition metal ions, defect centers, optically excited states (triplets, radical pairs))</i> – <i>distance measurements between two paramagnetic centers</i> – <i>determination of hyperfine couplings, dipolar and exchange interaction parameters, g-tensors, quadrupole tensors</i></p>