Stopped-Flow Spectrophotometer *Fast Kinetics*	Model: Unit and Room: Responsible: Further information:	*Applied Photophysics SX-20 Stopped-Flow Spectrophotometer* *Biochemistry, 10th floor, R.1002* *Dr. Susana Andrade, 203 8719* *http://portal.uni-freiburg.de/biochemie/equipment*

Short Description:

The SX20 is used to study transient and pre-steady-state kinetics of fast, liquid-phase chemical and biochemical reactions initiated by the rapid mixing and stopping (stopped-flow) of the reactants. A spectroscopic probe (absorbance or fluorescence) is employed to follow the course of the reaction by recording changes in the amplitude of the spectroscopic signal as a function of time. A typical upper limit to the reaction rates that can be measured with stopped-flow is ~2000s-1 in standard configuration; with smaller volume cells, rates in excess of 3000s-1 can be measured.

Picture of the Equipment

Available Experiments/Techniques:

Pre-steady-state reaction kinetics are measured through fast mixing of reactants by high-pressure Stopped-Flow. Dead time of the device can be optimized to about 0.5 ms and the reaction is monitored in a 2 x 5 x 10 mm^3 cuvette. Two- or four-syringe (aging line) rapid mixing.

Special Equipment:

Photomultipliers, Photodiode Array, temperature-controlled reaction chamber and cuvette.

Measurements on the equipment are currently done by:	☐ Students ☐ Students after Introduction ☒ Students after extensive training ☐ Trained scientific service personal
Recent Publications, where this instrument was important (optional): Give citation	
Typical problems that may be solved with this instrument:	*- Pre steady-state kinetics of chemical and enzymatic reactions* *- Monitoring of substrate turnover or ligand binding*