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P66 beamline for time-resolved luminescence experiments under VUV excitation at PETRA synchrotron

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The first works on the new beamline P66 design has been started 5 years ago as a part of PETRA III extension project [1]. At the very beginning of the project the main idea was to relocate very successful experimental station for time and spectrally resolved luminescence investigations from DORIS to the PETRA synchrotron source. The efficiency of the unique station SUPERLUMI at DORIS [2] was very high. The efficiency of the new P66 station is expected to be at least at the same level. The P66 will operate in the UV- VUV spectral region with pulsed synchrotron radiation excitation. A comparable time resolution in nanosecond range on one hand as well as an increasing number of users with high publications output on the other hand outlined a strong motivation for the future of the P66 at PETRA synchrotron.
On the later stage of the project the idea came to consideration, to add laser for two photon experiments. The goal is to establish innovative new pump-probe capabilities to close the gap in time resolution between nanoseconds and femtoseconds.
The final version of the layout of the P66, the parameters calculated for the optical elements, two-photon experiment details and timelines for construction site will be presented. Major changes of the beamline setup and electronics upgrade should make experiments more convenient and efficient for more than 20 scientific groups from all over the world.
References:
[1] http://petra3-extension.desy.de/
[2] G. Zimmerer, Radiation Meas. 42, (2007) pp. 859-864

Primary authors: Dr KOTLOV, Aleksei (Photon Science at DESY); Mr DRUBE, Wolfgang (Deutsches Elektronen-Synchrotron DESY, Hamburg); Mr SCHOSTAK, Ilja (Photon Science, Deutsches Elektronen-Synchrotron DESY,)

Presenter: Dr KOTLOV, Aleksei (Photon Science at DESY)

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