

25<sup>th</sup> June 2020, 10:00–11:00h

At Zoom virtual meeting: <https://desy.zoom.us/j/92315092578?pwd=dHpPOE1mbTh3dStNRWZkQnhhNTg2Zz09>

Meeting ID: 923 1509 2578

Password: 143916

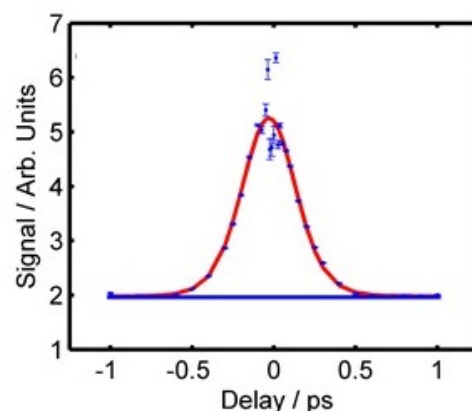
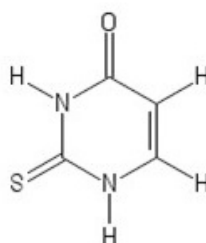
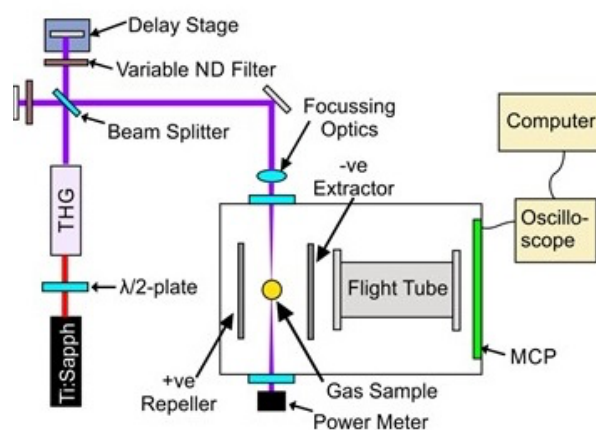
## Matthew Robinson

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### 2-Thiouracil: Determining the features of molecules in the lab and at facilities

Canonical DNA nucleobases, like uracil, are known to rapidly return to the ground state after being excited by UV light, leaving them relatively unaltered. Thionated nucleobases on the other hand, like 2-thiouracil, struggle to return to the ground state after excitation, and instead undergo internal conversions to a triplet state, causing it to become a reactive species. Due to this increased reactivity, it has been suggested that thio-nucleobases could be used in future photo-therapeutic procedures.

In this talk I will discuss a range of experiments that we have performed both in the lab (Potsdam) and at larger facilities (FLASH, DESY and the Swiss Light Source) to better elucidate the response of 2-thiouracil to light that spans the UV and VUV, in both static and time-resolved frames.



Left – Set-up of Potsdam-based mass spectrometer for pump-probe gas-phase molecular ionisation studies

Centre – Structure of 2-Thiouracil

Right – Time-dependent signal of parent 2-thiouracil ion following 266 nm pump-probe studies