

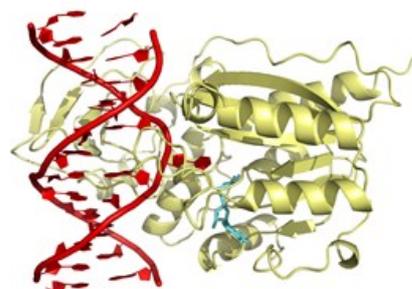
Single-molecule fluorescence sensing of DNA enzyme activity, using pulse-shaped multiphoton excitation

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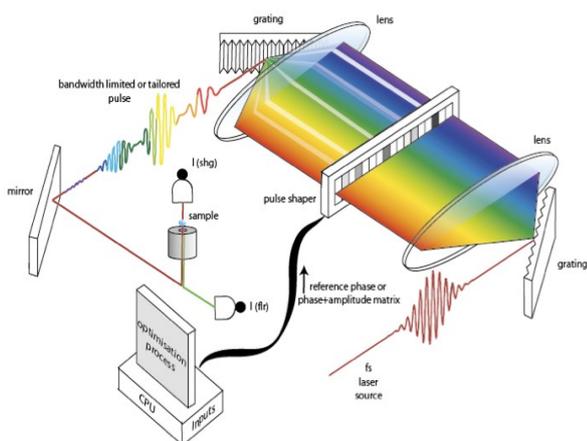
This 4-year PhD studentship is offered in association with the EPSRC Centre for Doctoral Training in Intelligent Sensing and Measurement, CDT-ISM (joint between the Universities of Edinburgh and Glasgow). <http://cdt-ism.org/>

DNA-modifying enzymes are becoming increasingly important in genetic medicine. The development and effective use of gene-based therapies demands the specific and sensitive detection of the activities of these enzymes. Currently available methods measure the amount rather than activities or functionalities of enzymes. However, it is the activities, not the quantities *per se* of enzymes that dictate their biological functions.

In this project we will use new DNA base analogues with exceptional fluorescence properties to develop and apply a new, ultrasensitive DNA-enzyme sensing modality, exploiting novel, pulse-shaped multiphoton excitation.



We aim to detect DNA enzyme activity at the single-molecule level, the ultimate detection sensitivity, to enable the detailed examination of the molecular mechanisms of DNA modification and underpin the development of new epigenetic diagnostic and treatment regimes.



For further information and informal enquiries please contact Prof. Anita Jones a.c.jones@ed.ac.uk

Formal application procedure

Submit an application for a 4-year PhD with Integrated Study at the Centre for Doctoral Training in Intelligent Sensing and Measurement by sending your CV and a covering letter, as soon as possible, to Prof Andy Harvey at i-sensing-measurement@glasgow.ac.uk

In your covering letter, identify this project as your chosen one.

For details of eligibility and funding see <http://cdt-ism.org/how-to-apply/>

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