

A Physicist's Perspective

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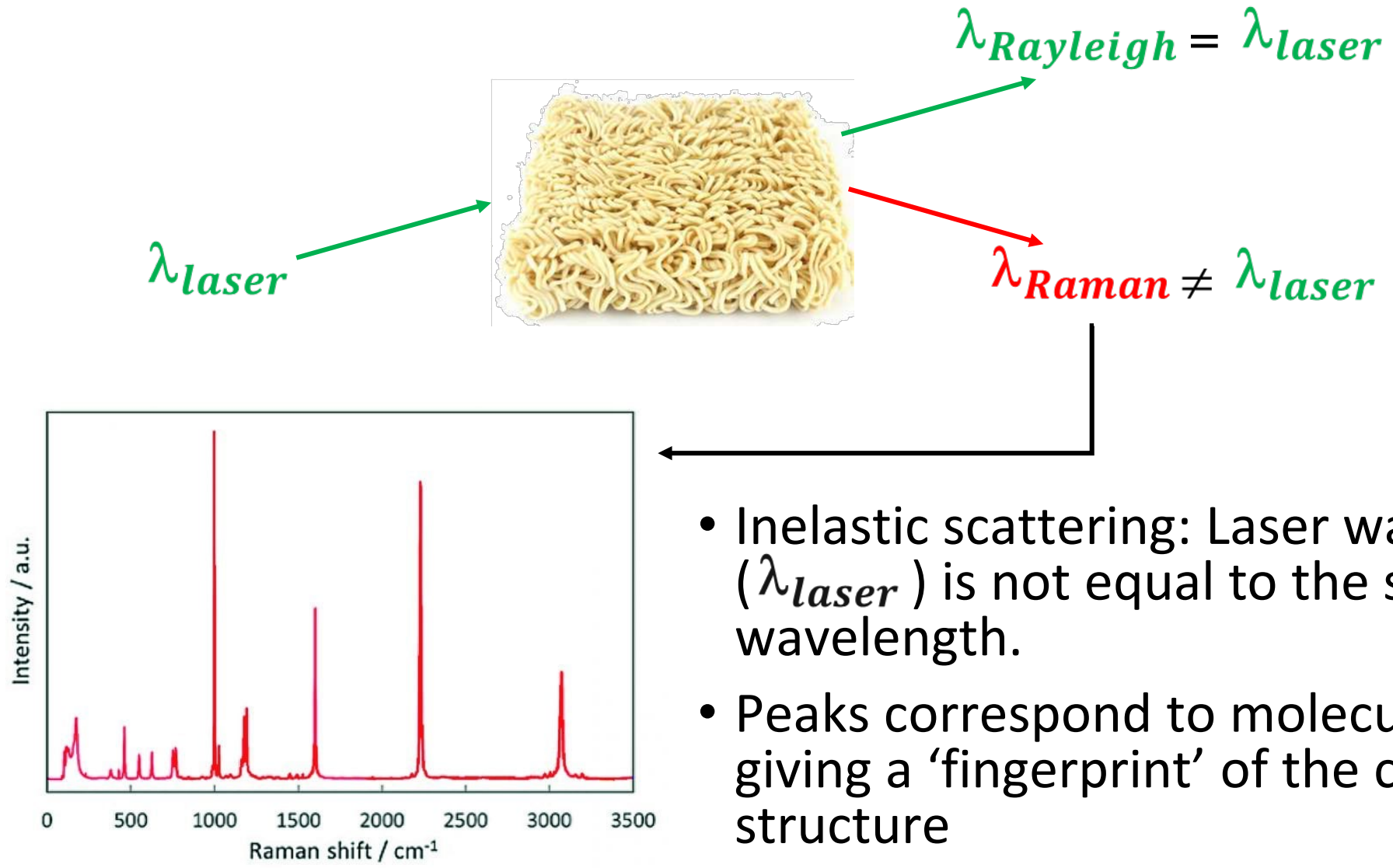
About Me

- Physics BSc at University of Exeter
- Took a few biophysics modules applying physics models & equations to cells & biological processes
- UCL internship doing biomedical engineering – caught the research bug
- Had never used a pipette before rotational training
- Wanted a biomedical engineering research opportunity willing to accept someone completely unqualified

My Supervisor & Project

- Supervisor: Dr Pola Goldberg Oppenheimer
- Project: Develop an in-vivo, eye-safe and portable device to diagnose Traumatic Brain Injury (TBI) using Raman spectroscopy.
- TBI sustained when damage is inflicted on the skull & is responsible for approx. 50% of trauma-related deaths worldwide per year.
- Currently diagnosed using CT and MRI scans, Raman spectroscopy could be a faster, more accessible and portable alternative.

Raman Spectroscopy



- Inelastic scattering: Laser wavelength (λ_{laser}) is not equal to the scattered wavelength.
- Peaks correspond to molecular bonds, giving a 'fingerprint' of the chemical structure

Industrial Supervisors/Partners


- Defence Science and Technology Laboratory (DSTL)
- Industrial supervisors: Dr Abigail Spear & Dr Chris Howle
- Gave a presentation including our progress with the device.
- Was given a tour of the research facilities including optics and cell culturing labs.
- Kick-started partnership, set some future plans in motion and made me realise that DSTL isn't scary.

Cohort Experience

- Rotational training helped me realise our cohort are kind, patients and willing to help when you are new to a task or subject – you'll only benefit from this if you speak up about what you don't know!
- The motivation and support from our cohort feels like a family – this really helped me when also dealing with a new city, discipline and work-life.



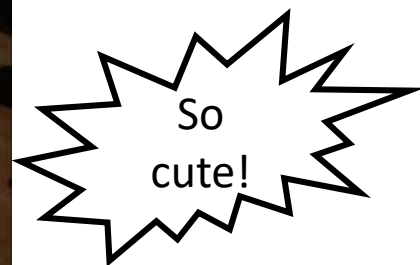
My First Cell Culture!



Legends!

Cohort Experience

- After the training I felt I understood the motives of the CDT better and was stimulated to represent the CDT on social media and at networking events.
- Knowing all of my cohort members and being comfortable around them gave me the confidence to apply for the interdisciplinary skills student rep. position.



Conclusion

- Valuable to have an Industrial Partner that is compatible with the student and the project; making early connections and having an additional base to work helped me feel established.
- Having the intense rotational training early on in our 1st year made me feel relaxed, supported by my cohort and well-equipped to represent the CDT in networking events.
- I feel proud and privileged to be a part of a unique CDT that sees the potential for a wide range of students in becoming future leaders in our field.



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Thank You!

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