



Photonic Systems Development

UCL-Cambridge Centre for Doctoral Training

The Reflection Goniophotometer

Measurements using the Imaging Sphere

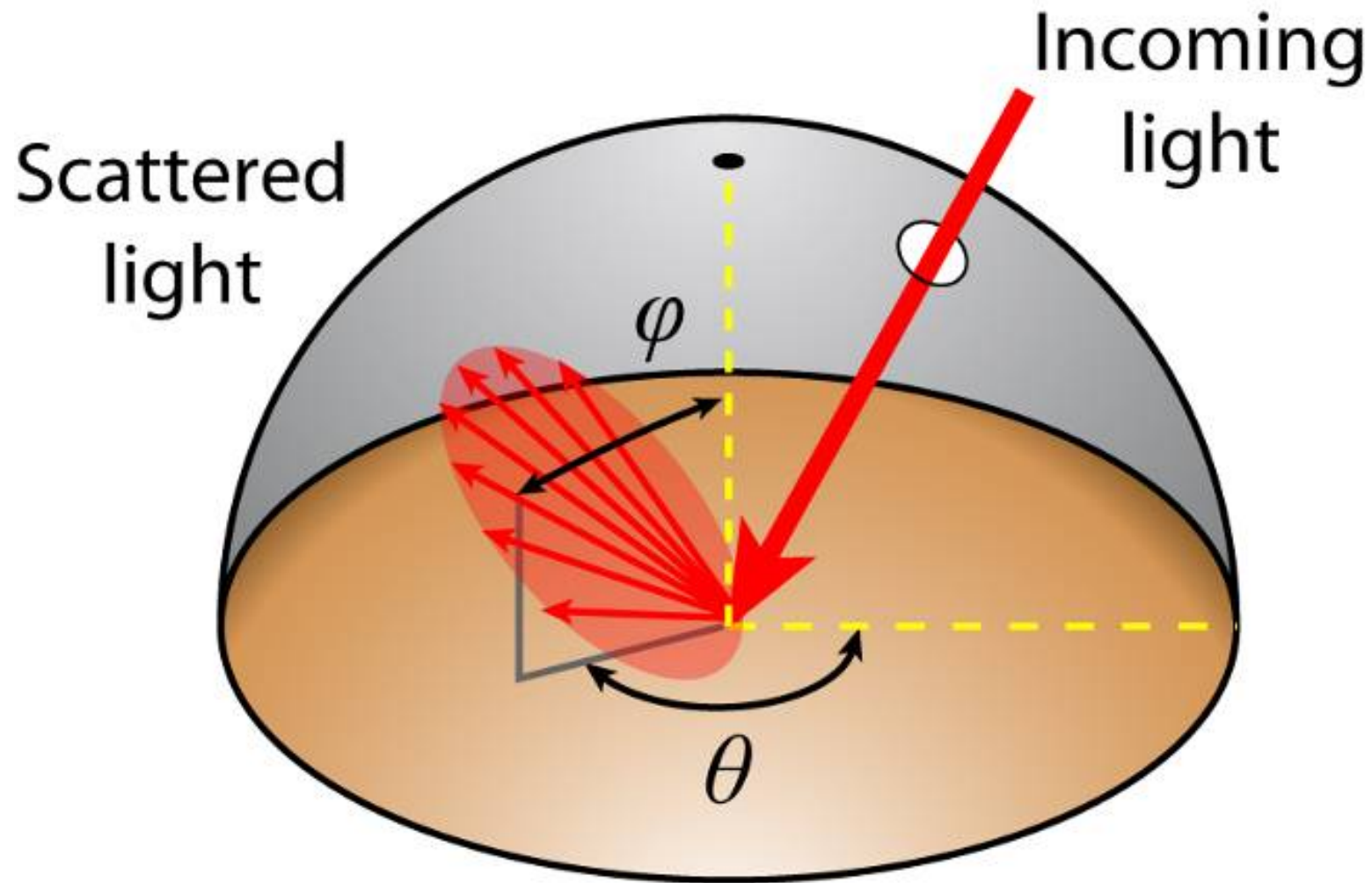
Mark S. Brown

Supervised by Dr. I. Papakonstantinou, Dr. P. Lecoq

Monday 3rd February 2014

www.markbrown.io/slides/today
(<http://www.markbrown.io/slides/today>)

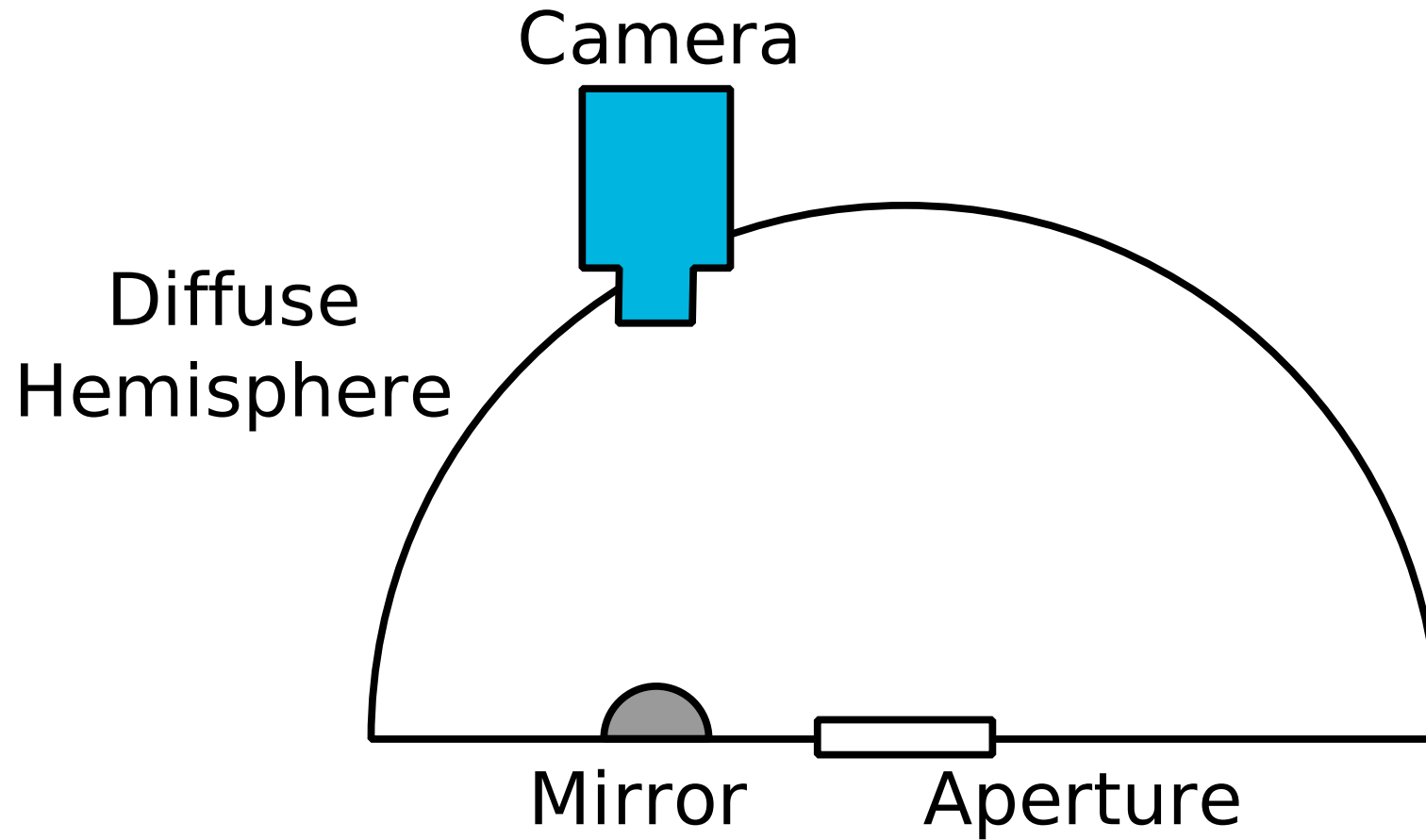
What is a Goniophotometer?



Typical Goniophotometer



Key Components of the Imaging Sphere



Reflection Goniophotometer

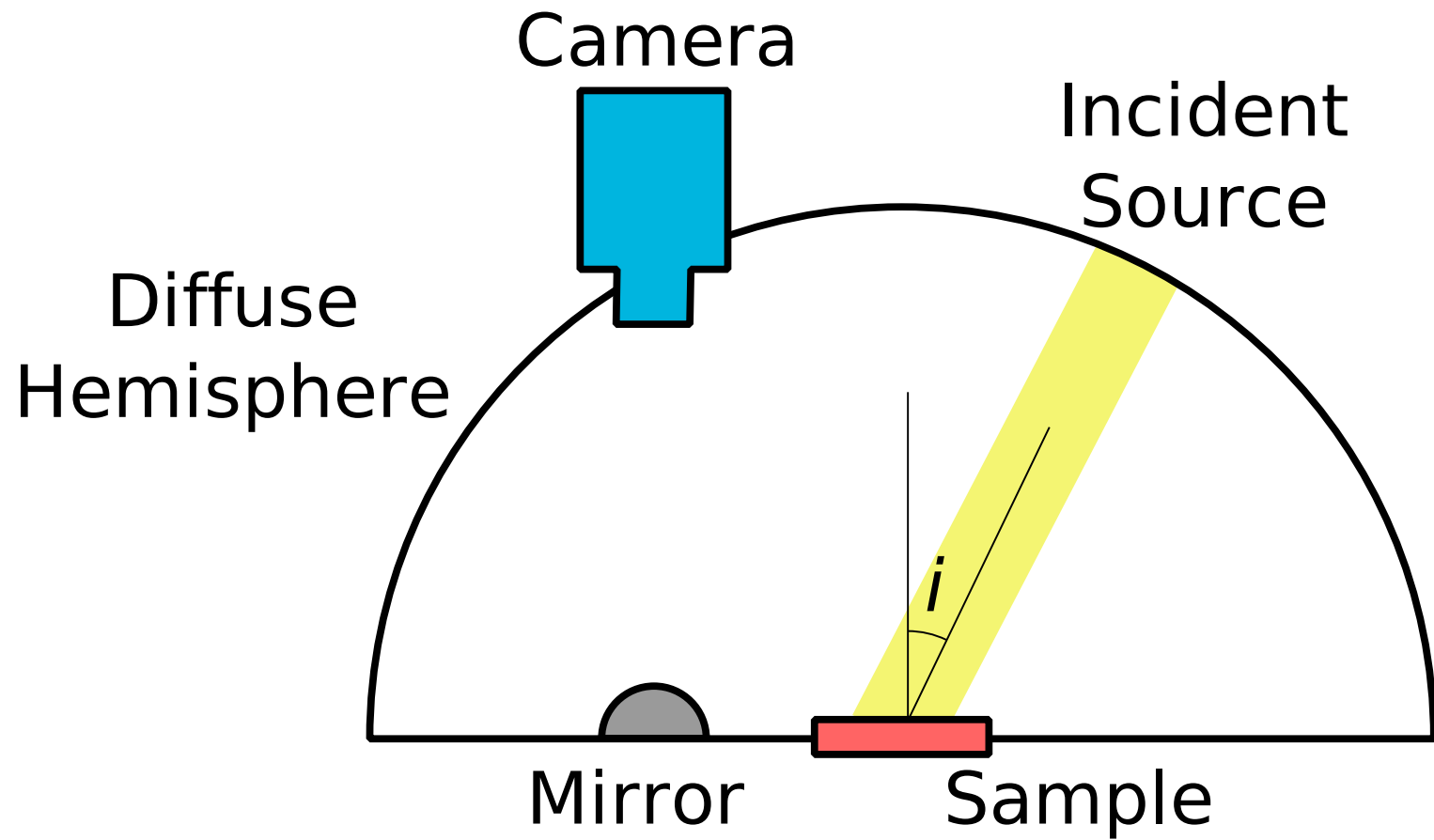
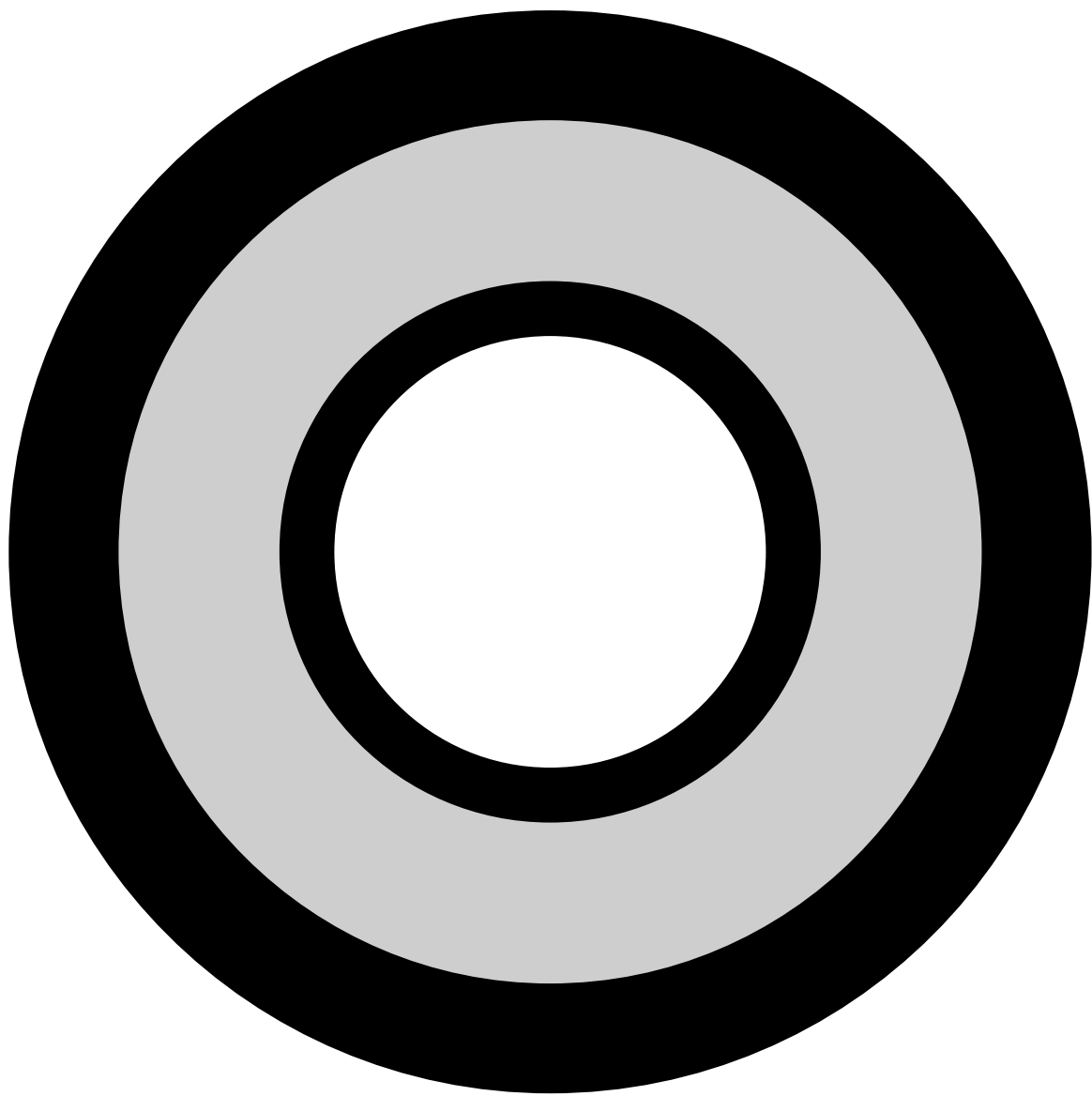


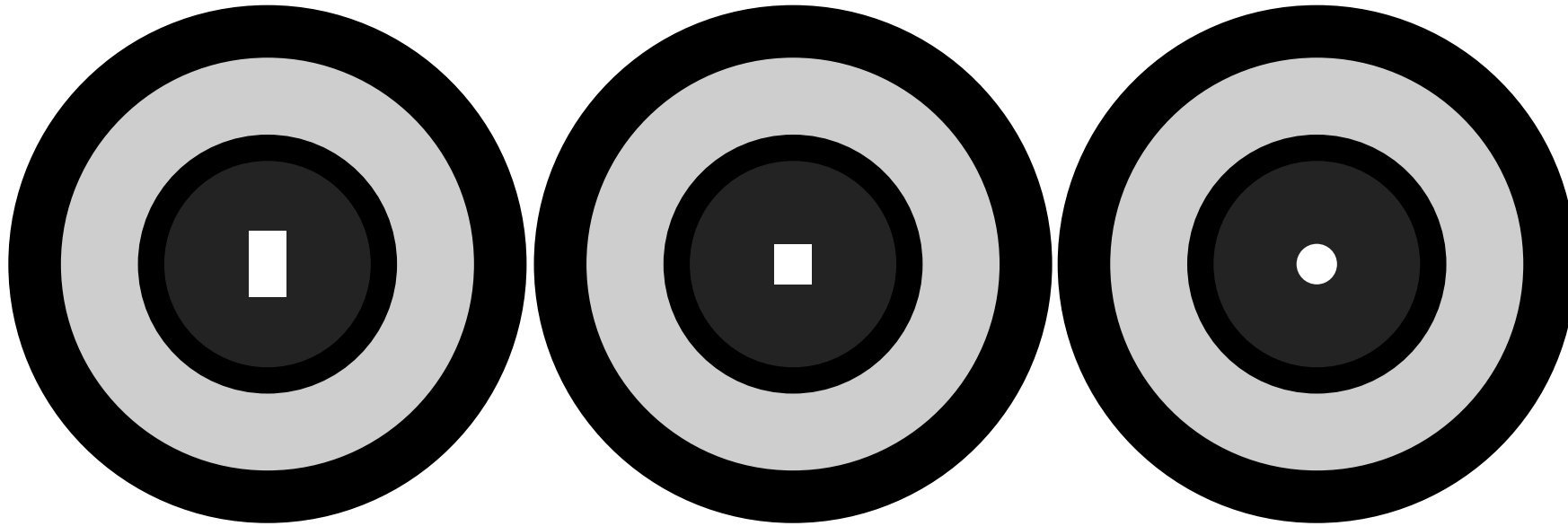
Image Formation

1st Order reflection

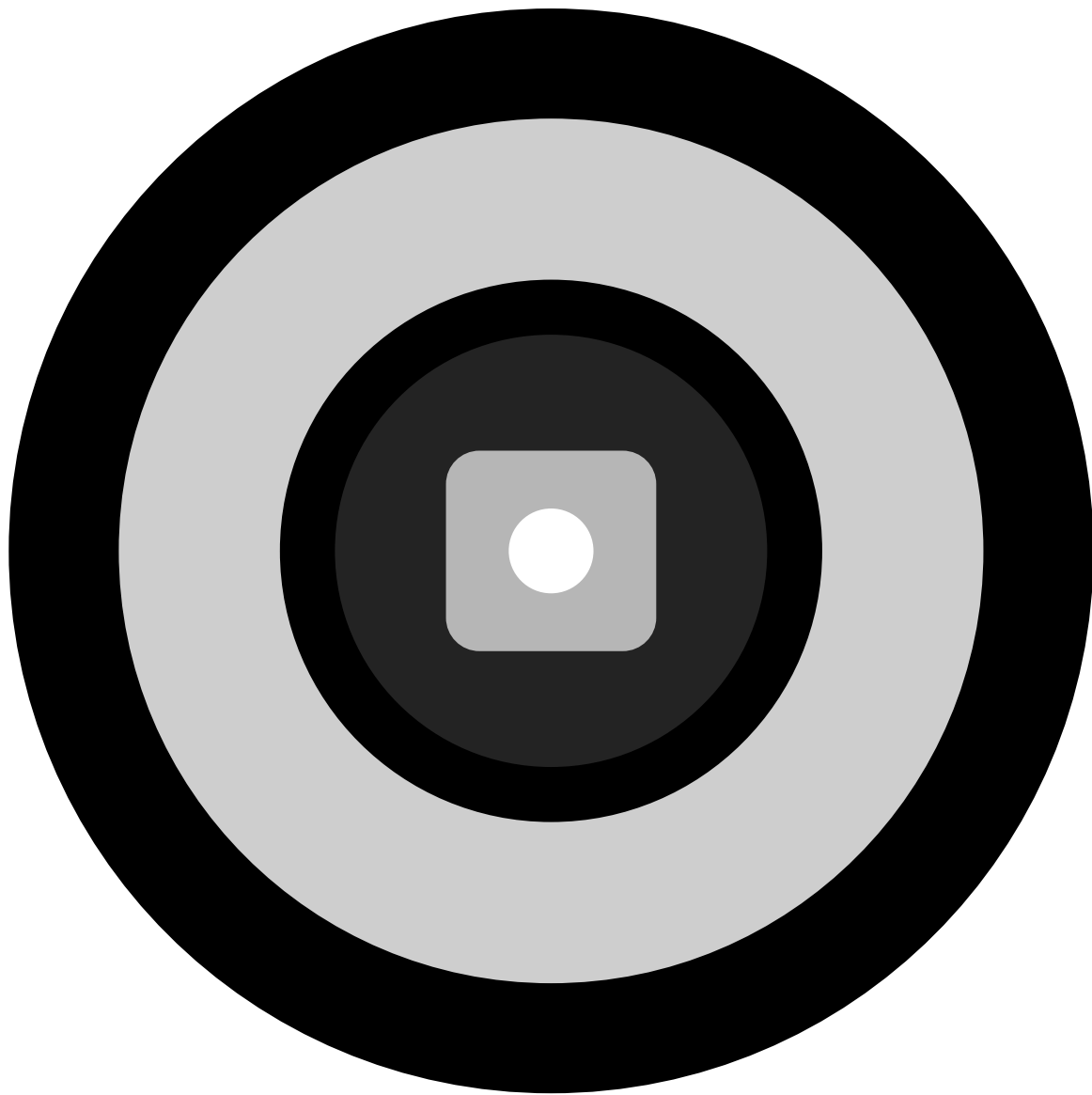
The Aperture



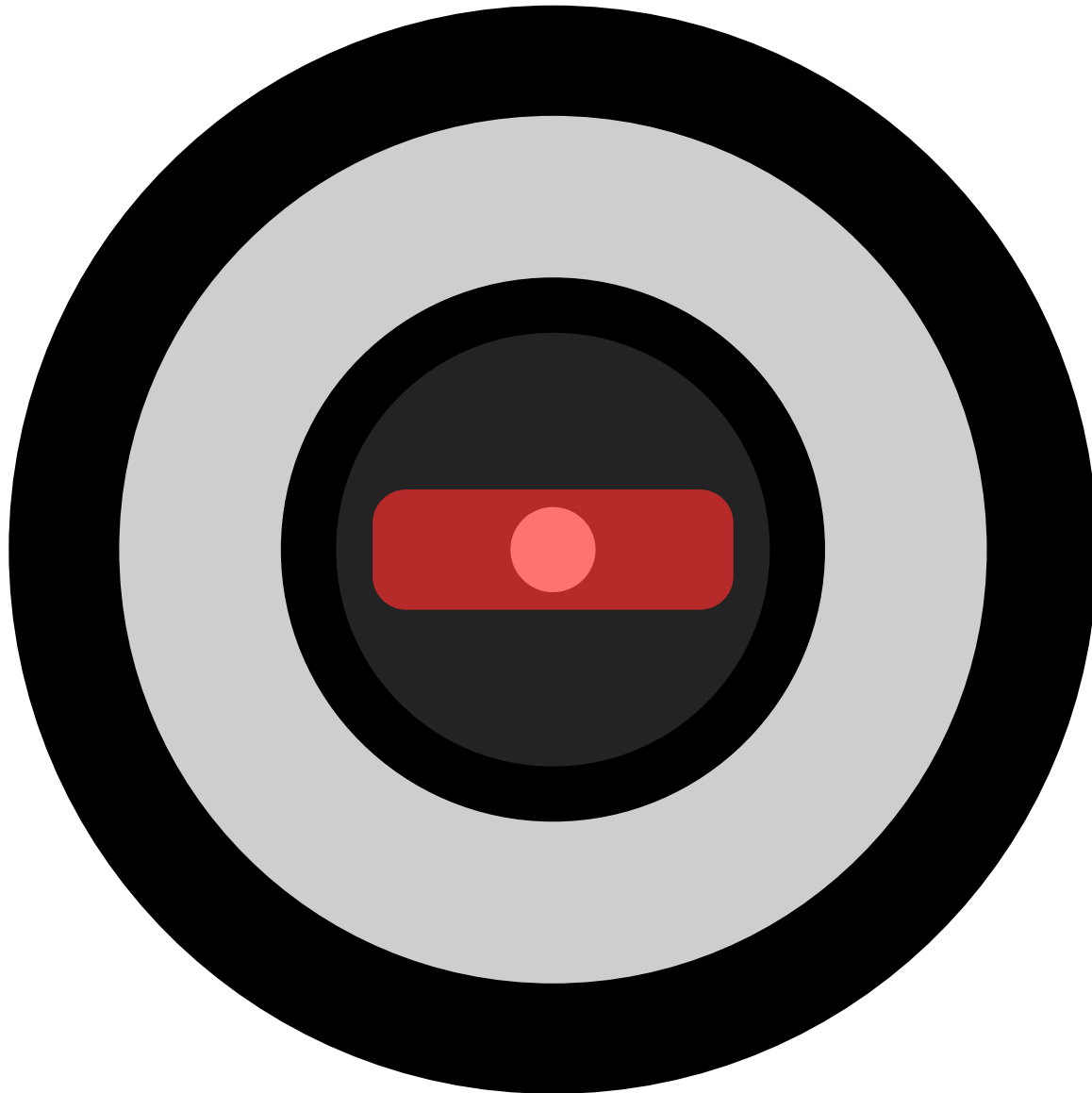
Step 1) Aperture Mask Calibration



Step 2) Standard Sample Calibration



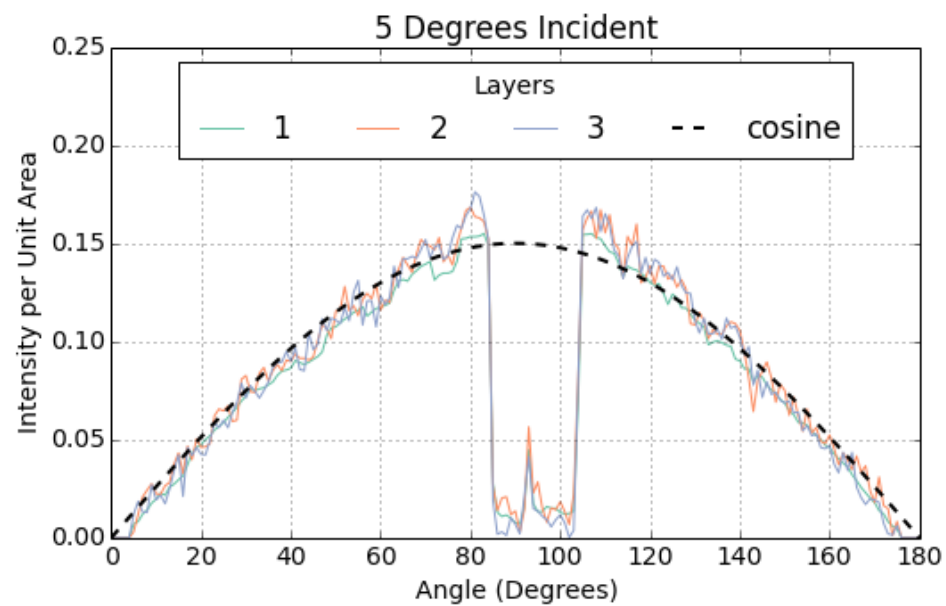
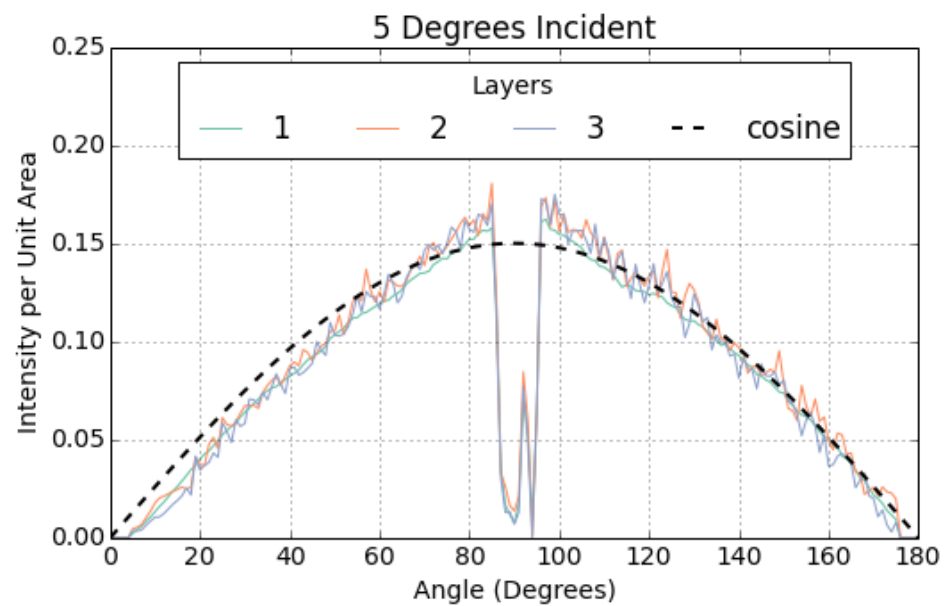
Step 3) Measurement

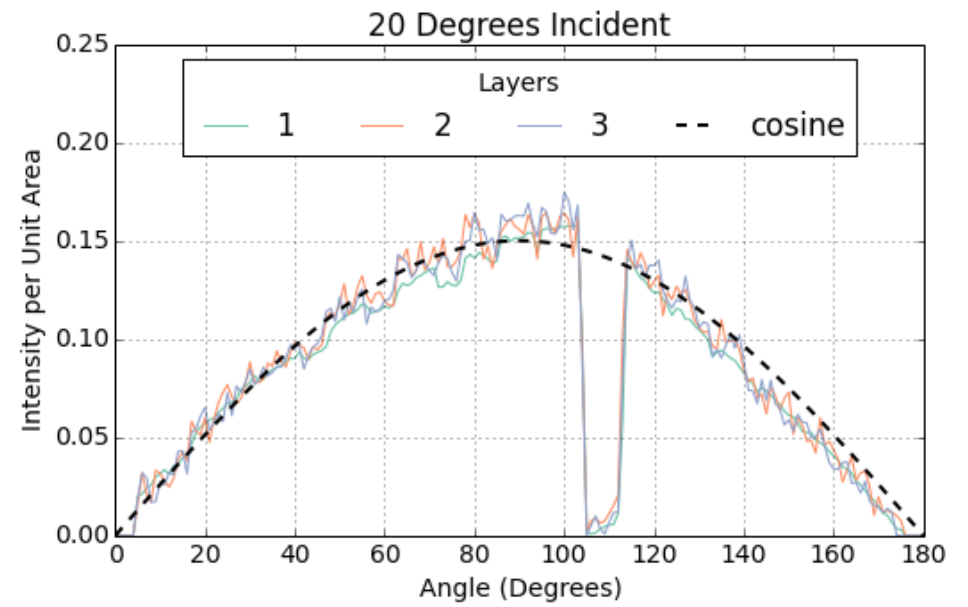
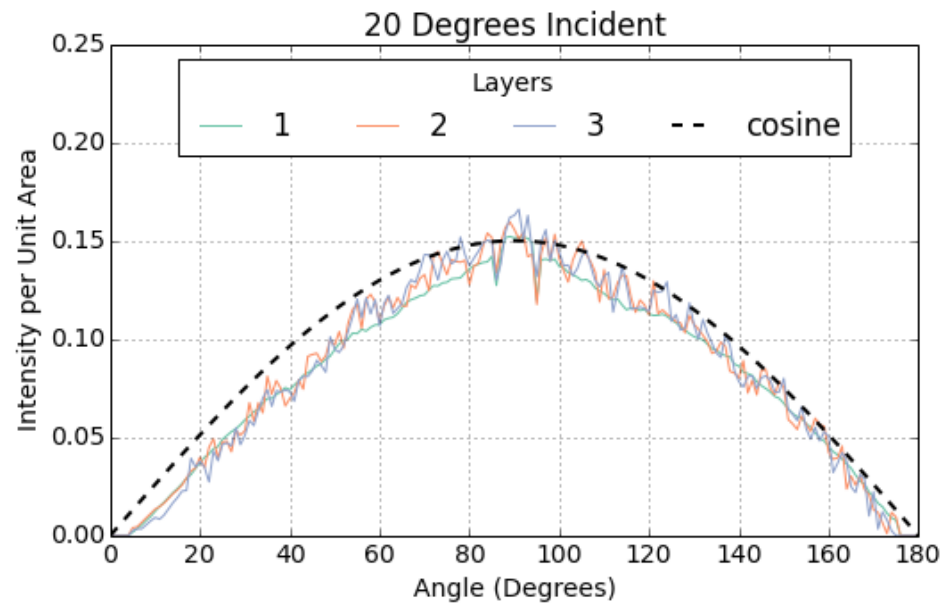


Example Measurement - *PTFE*

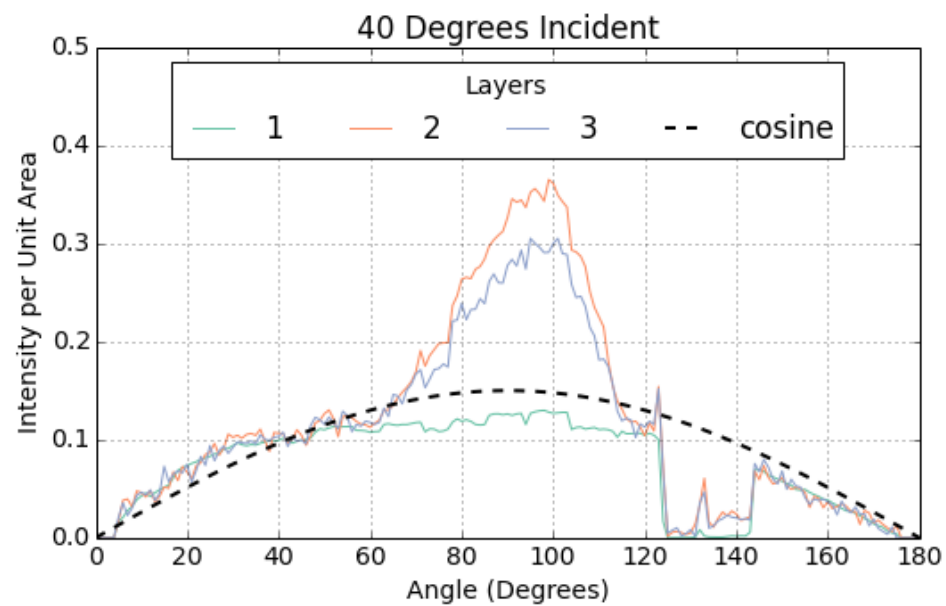
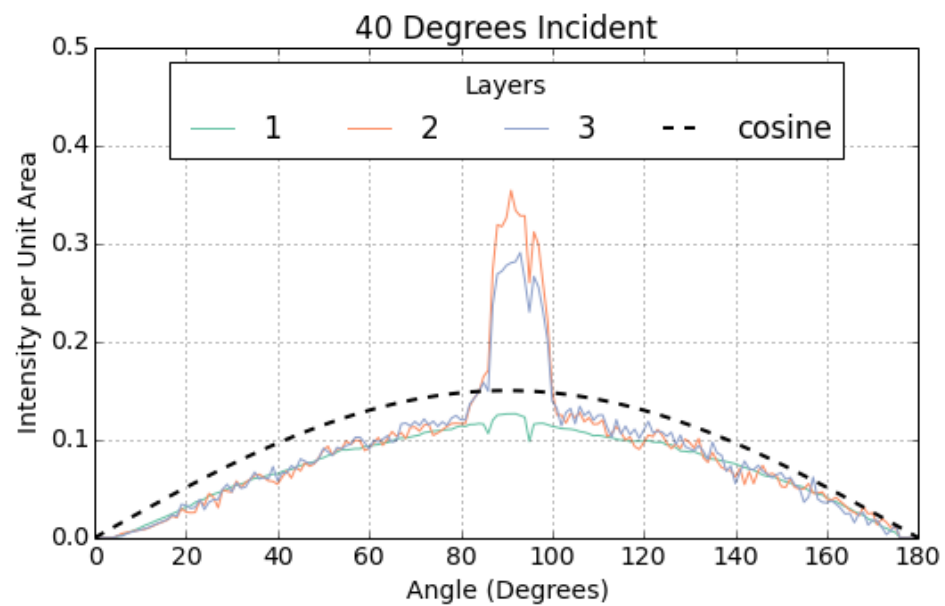


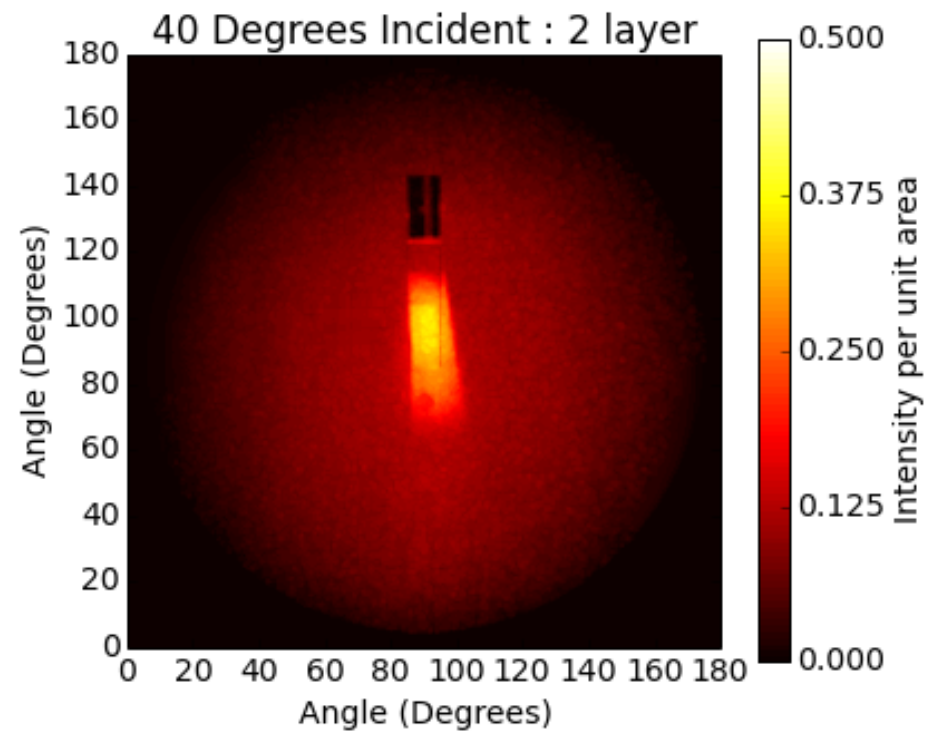
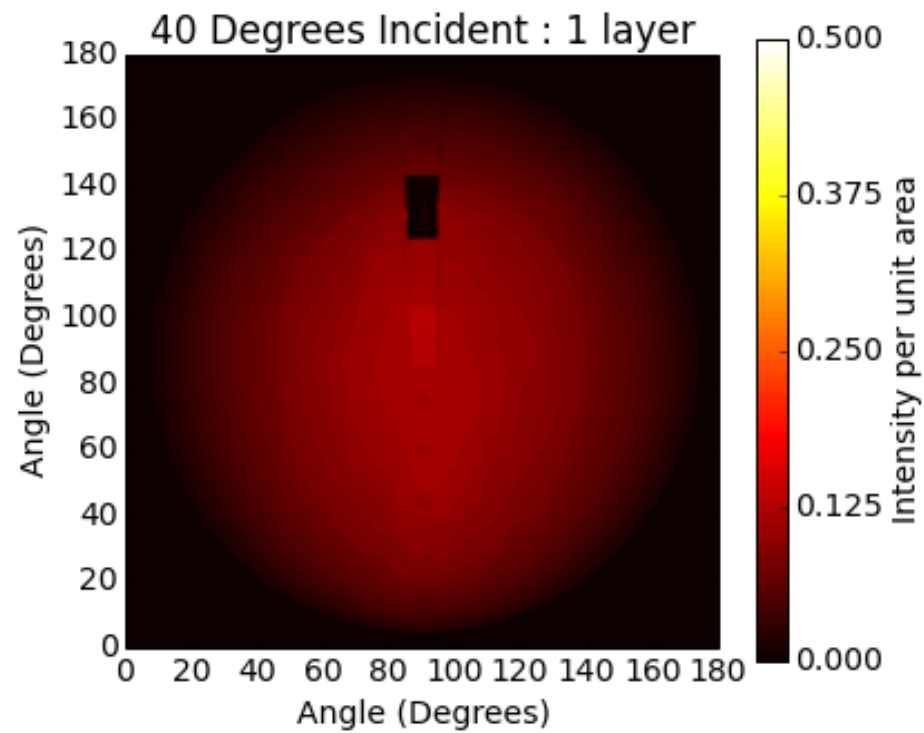
PTFE Results





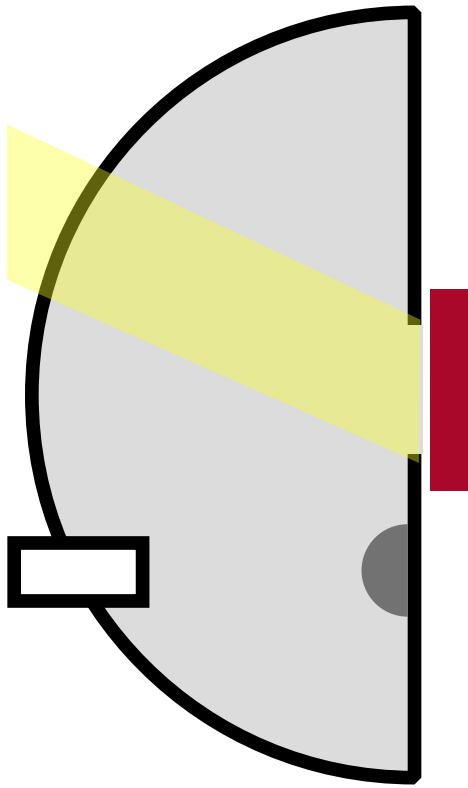
PTFE Results (2) : Oddity



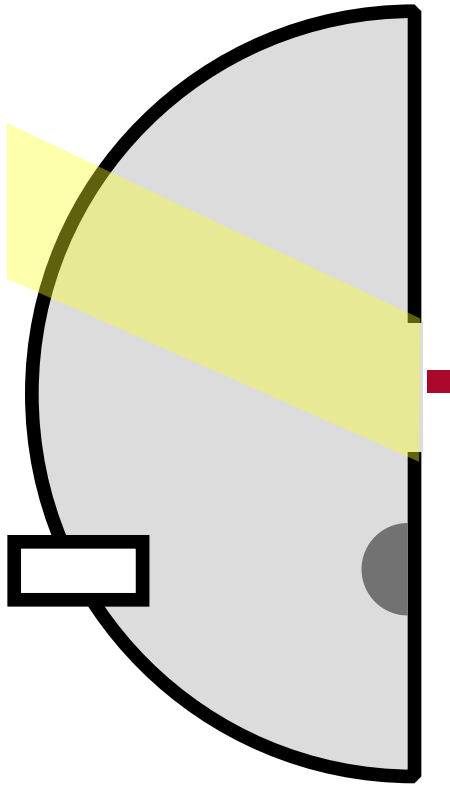


Current Work

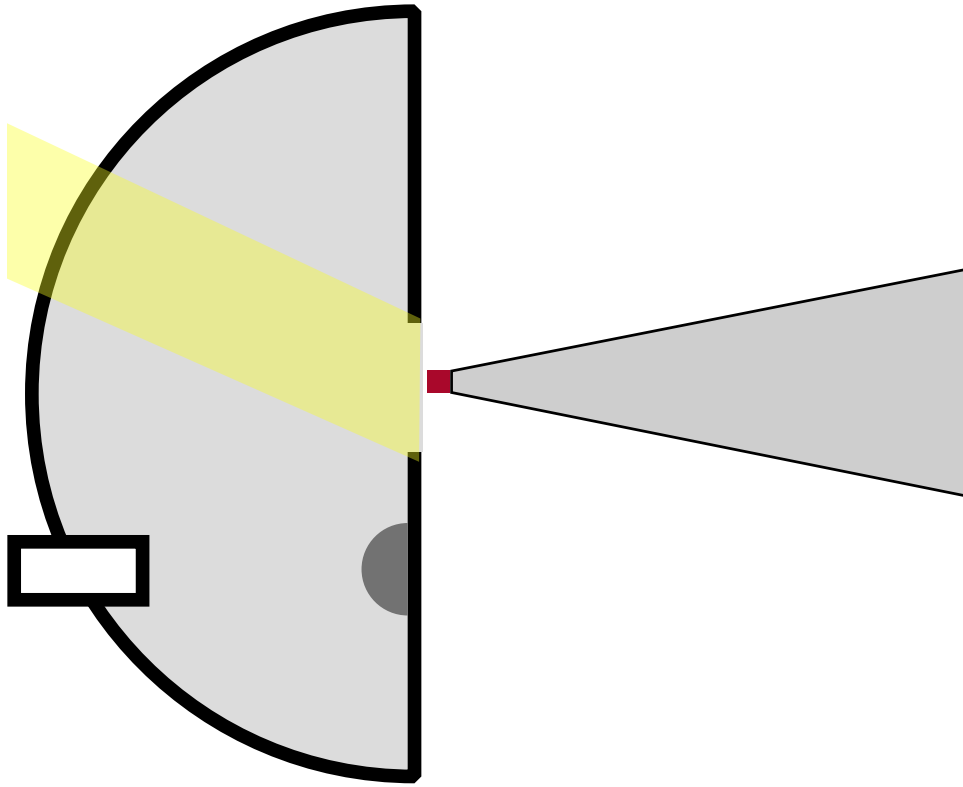
Typical Measurement



Issue : Small Samples



One Potential Solution?



Summary

- Initial Results Collected of PTFE
- Potential methods for measuring small samples being explored



EPSRC

Pioneering research
and skills



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Thanks for listening!