

A diagram illustrating the dispersion of light. A white triangular prism is shown on a light blue background. A beam of white light enters the left side of the prism. As the light exits the right side, it is dispersed into a fan-shaped spectrum of colors, ranging from red at the top to violet at the bottom, with orange, yellow, green, and blue in between.

Center for Photochemical Sciences

LIGHTING THE WAY

40 YEARS
1985-2025

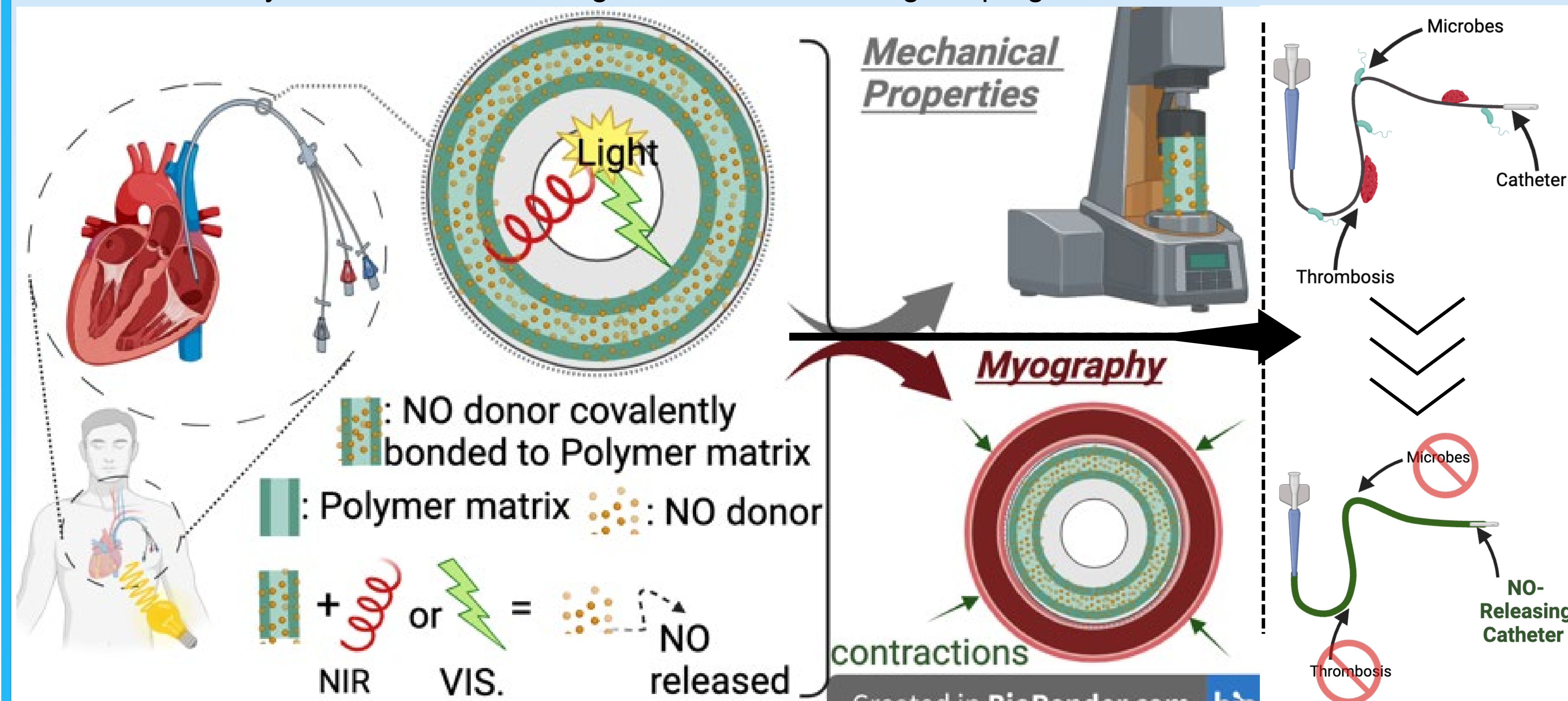
The logo for Bowling Green State University (BGSU) is located in the bottom right corner. It features the letters "BGSU" in a bold, sans-serif font. The "BG" is orange, and the "SU" is black. A registered trademark symbol (®) is positioned to the right of the "U".

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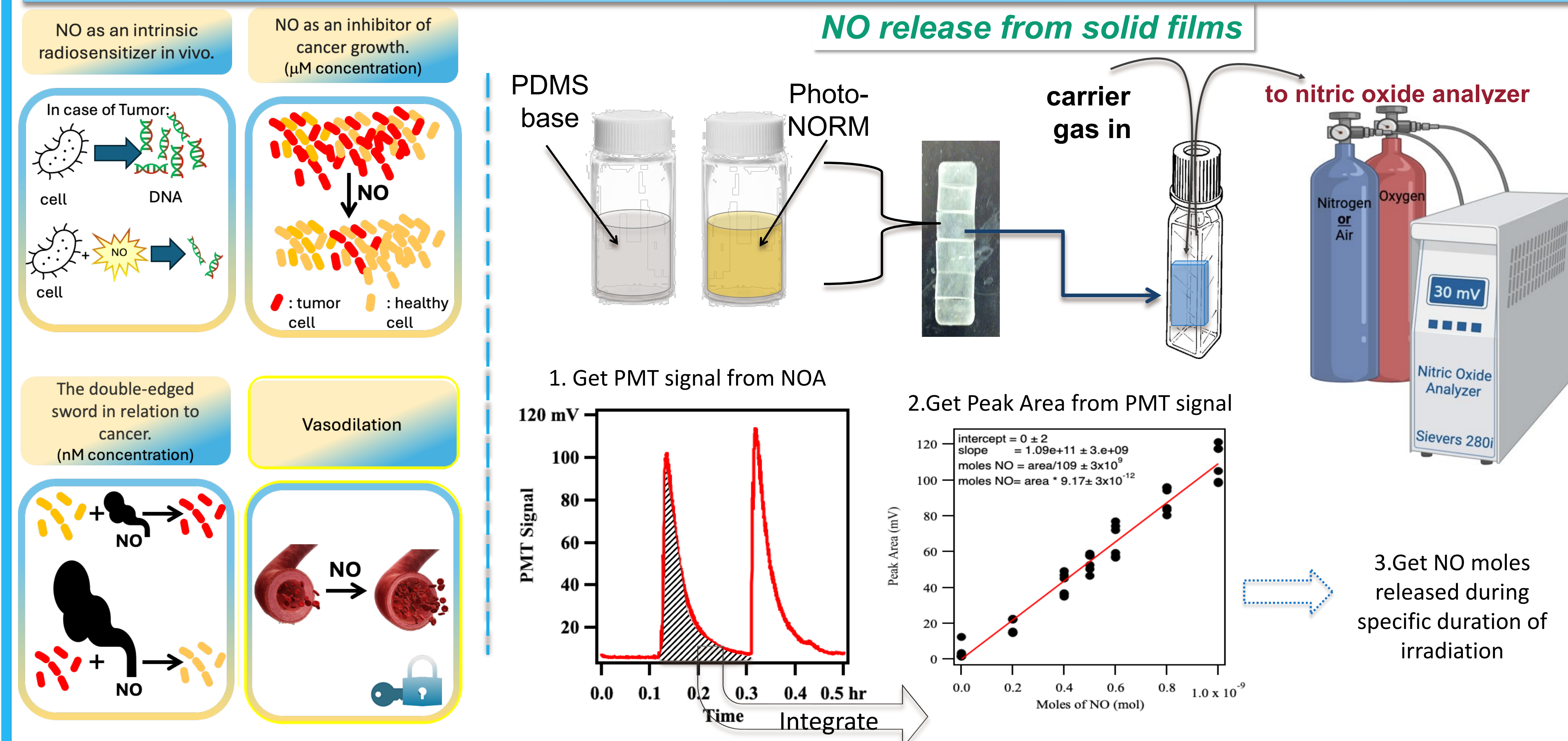
Department of Chemistry and Center for Photochemical Sciences,
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My project will focus on designing a biocompatible photo responsive material with an inorganic nitric oxide releasing complex that is sensitive to red and NIR light. The specific aims of my research are to:

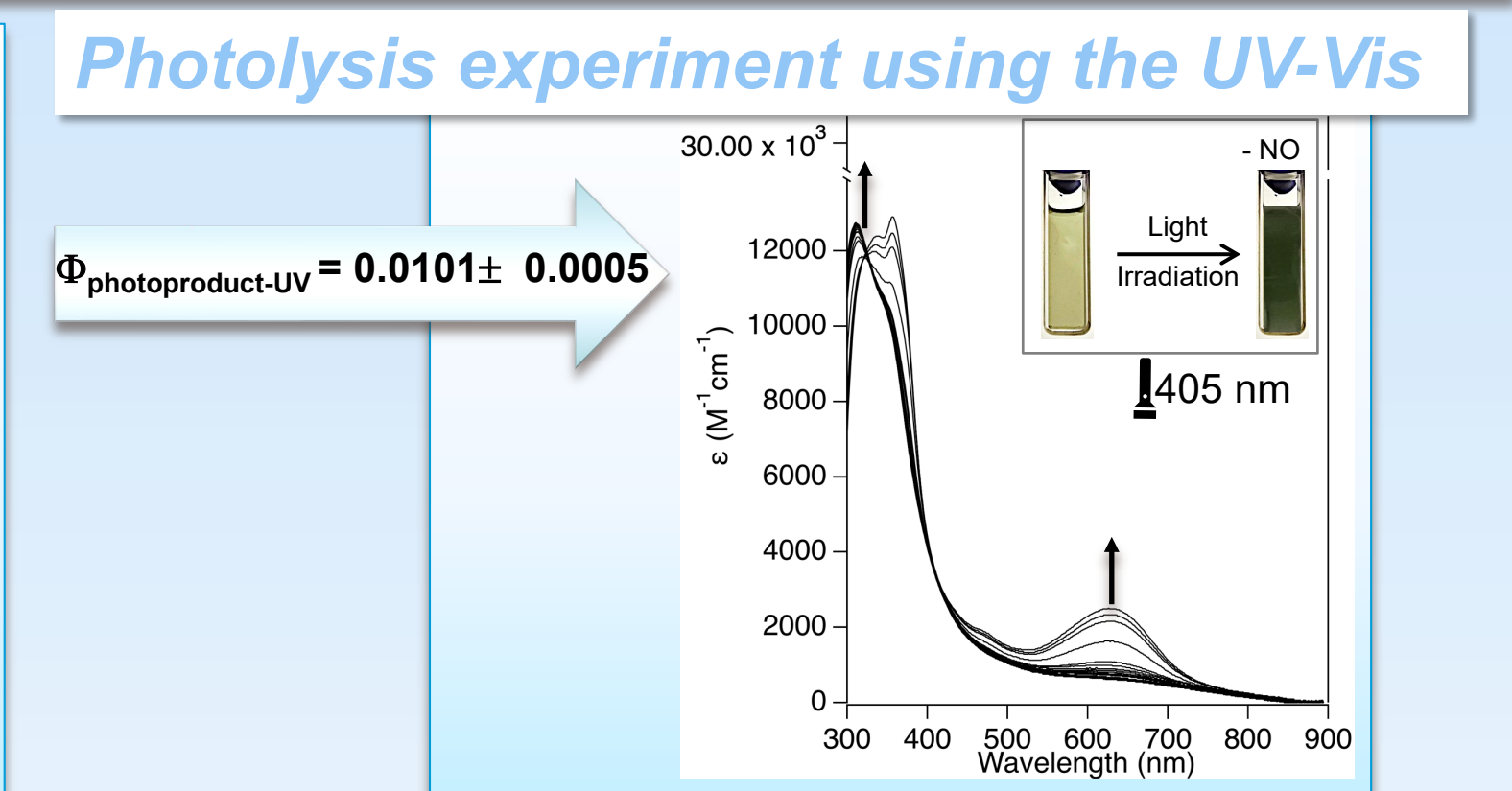
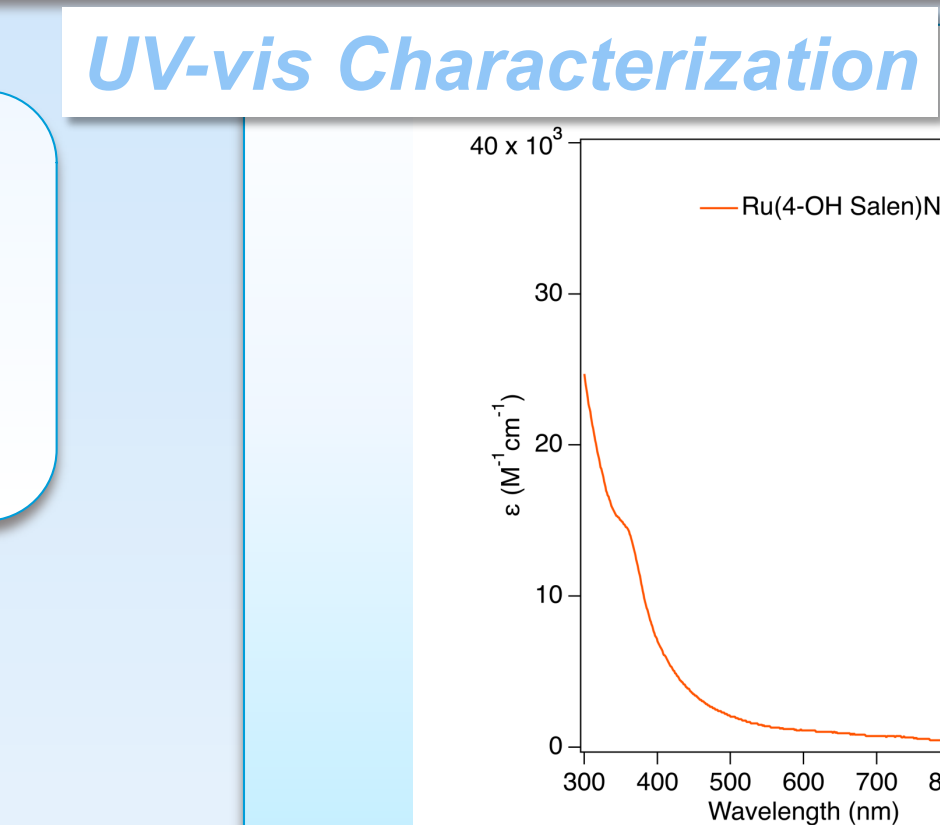
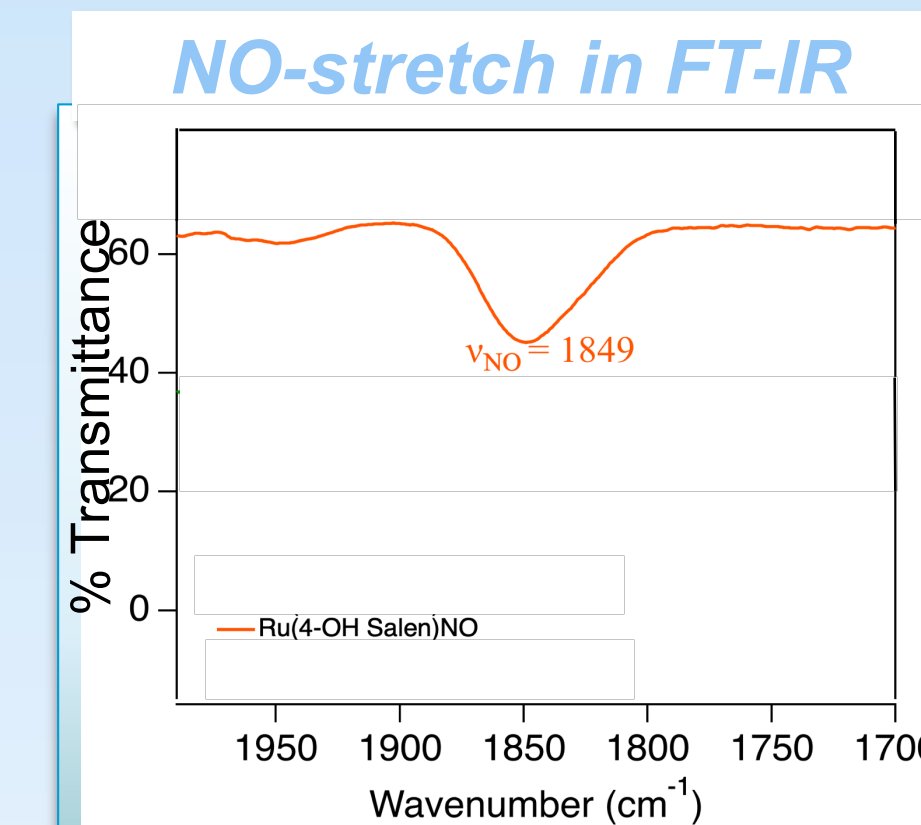
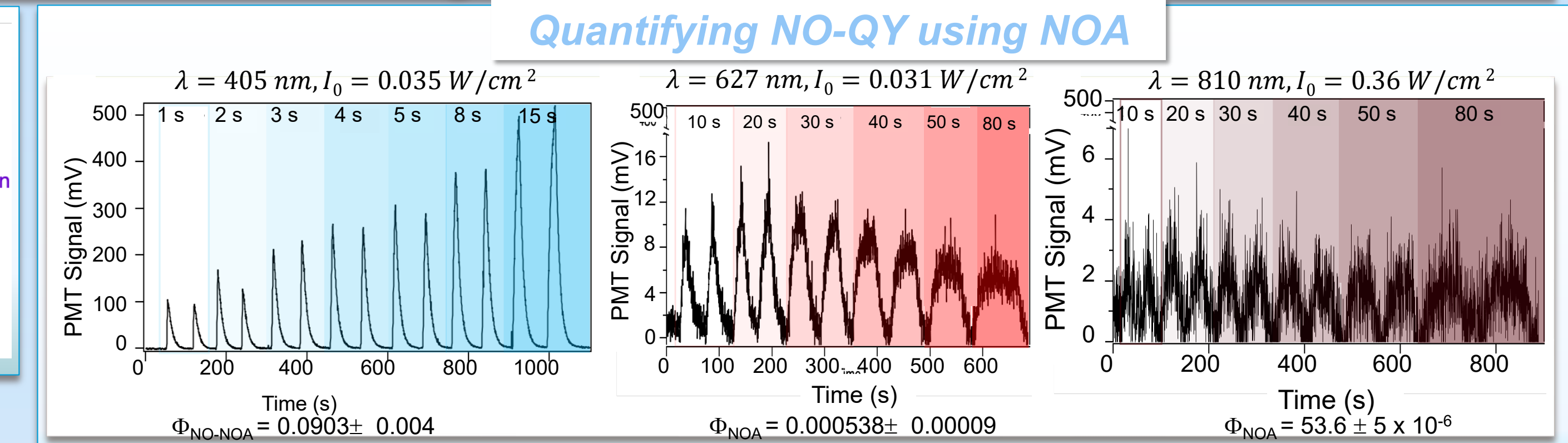
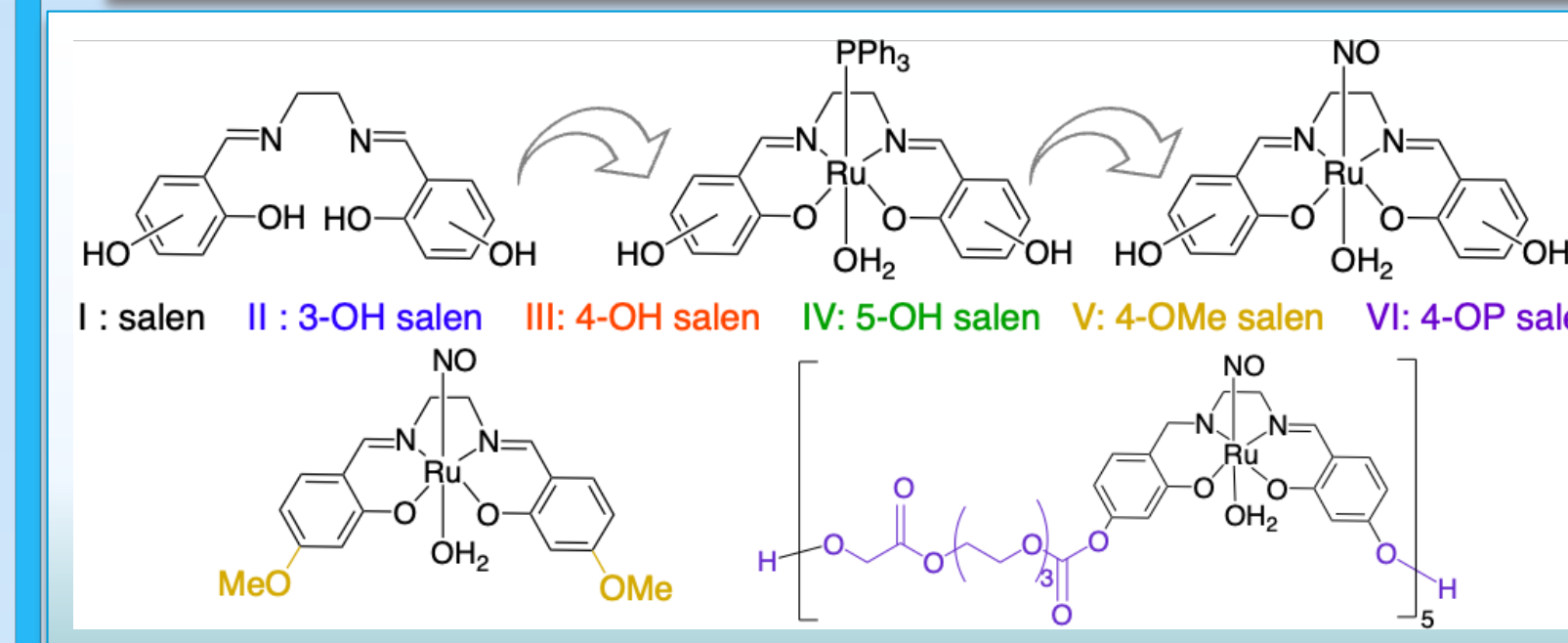
- I. Determine which inorganic ***NIR-light sensitive Photo-NORM*** can be covalently attached to an ideal biocompatible silicone-based polymer matrix with easy (inexpensive synthesis with no more than 3 steps) chemical synthesis and capable of being implanted into a human body while maintaining silicone polymer properties, providing a ***controlled and consistent NO release*** at biologically relevant conditions.
- II. Determine how NO donor and light irradiation affect ***mechanical properties*** of the designed NO-releasing polymers that will be used to form the catheters, as well as assess their influence on ***vasodilation*** in the tissues of the synthesized NO releasing catheter in smoothing the progress of the infected vessels.



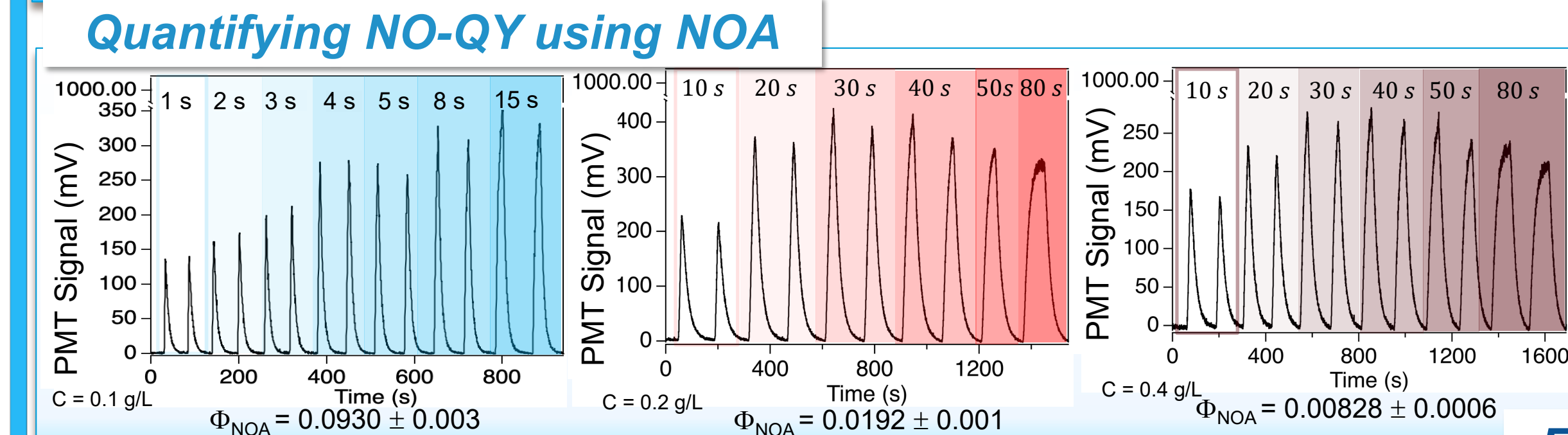
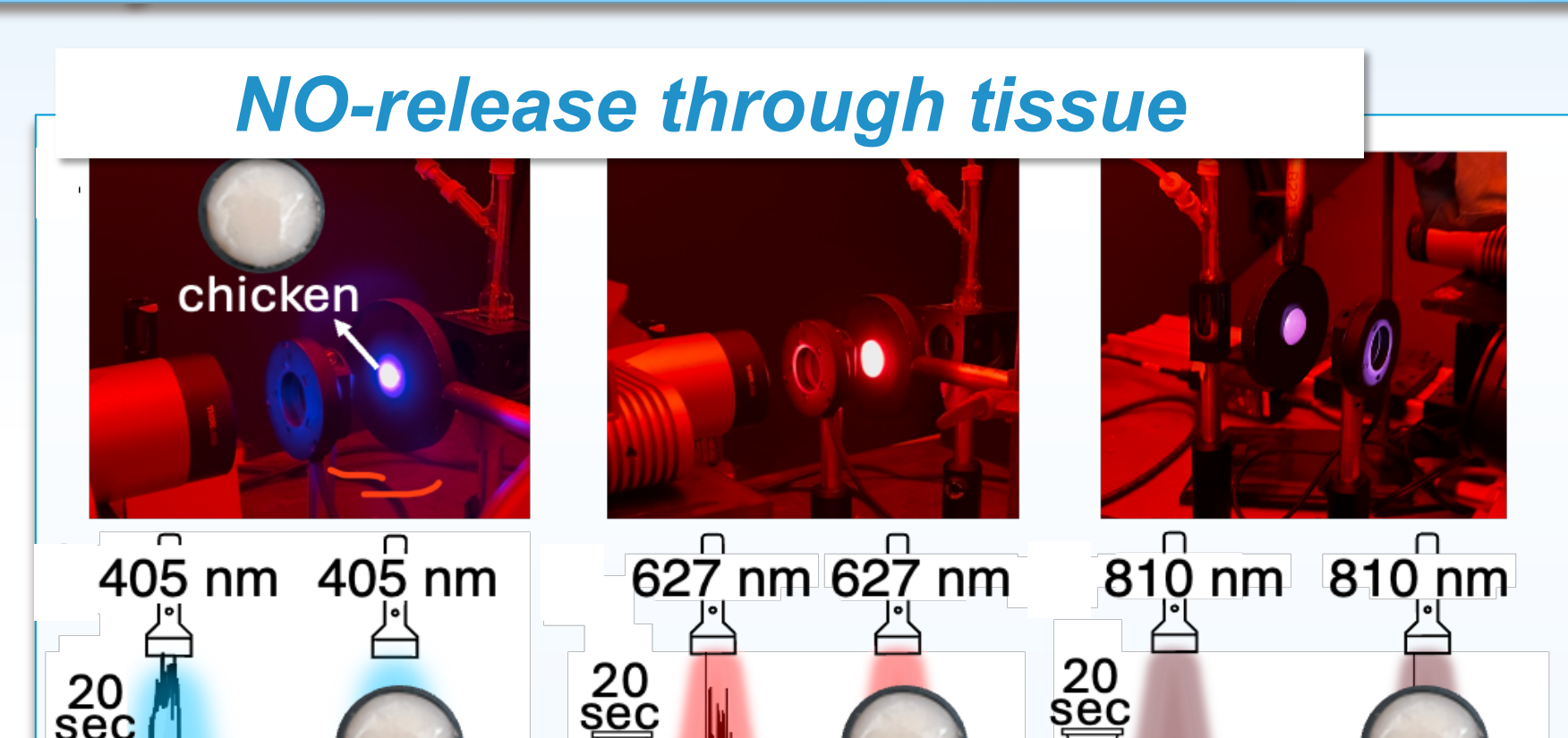
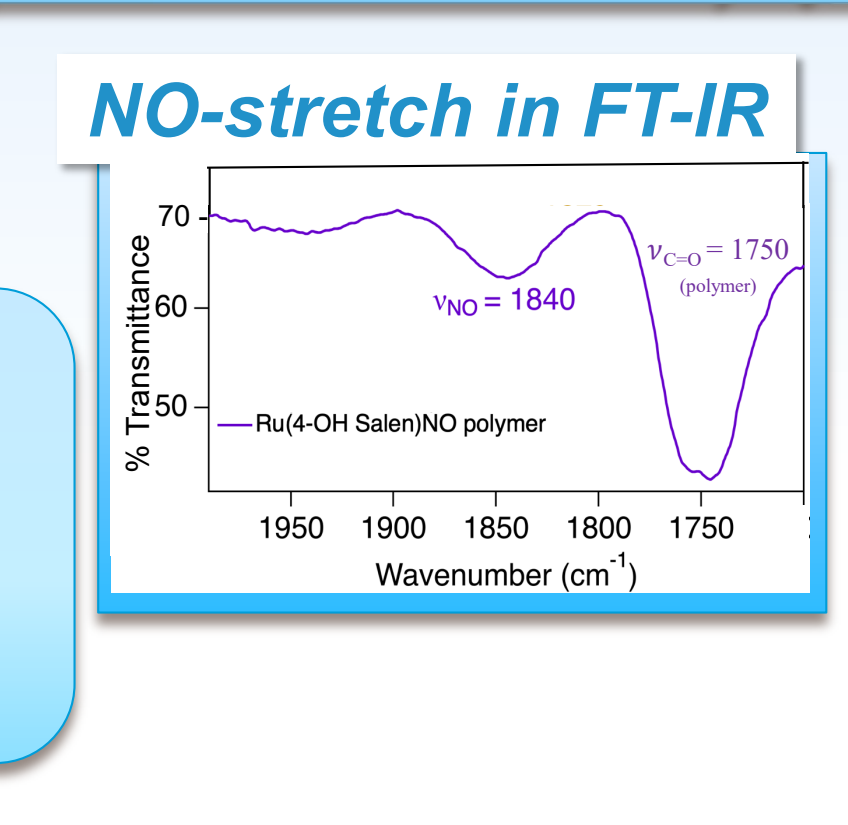
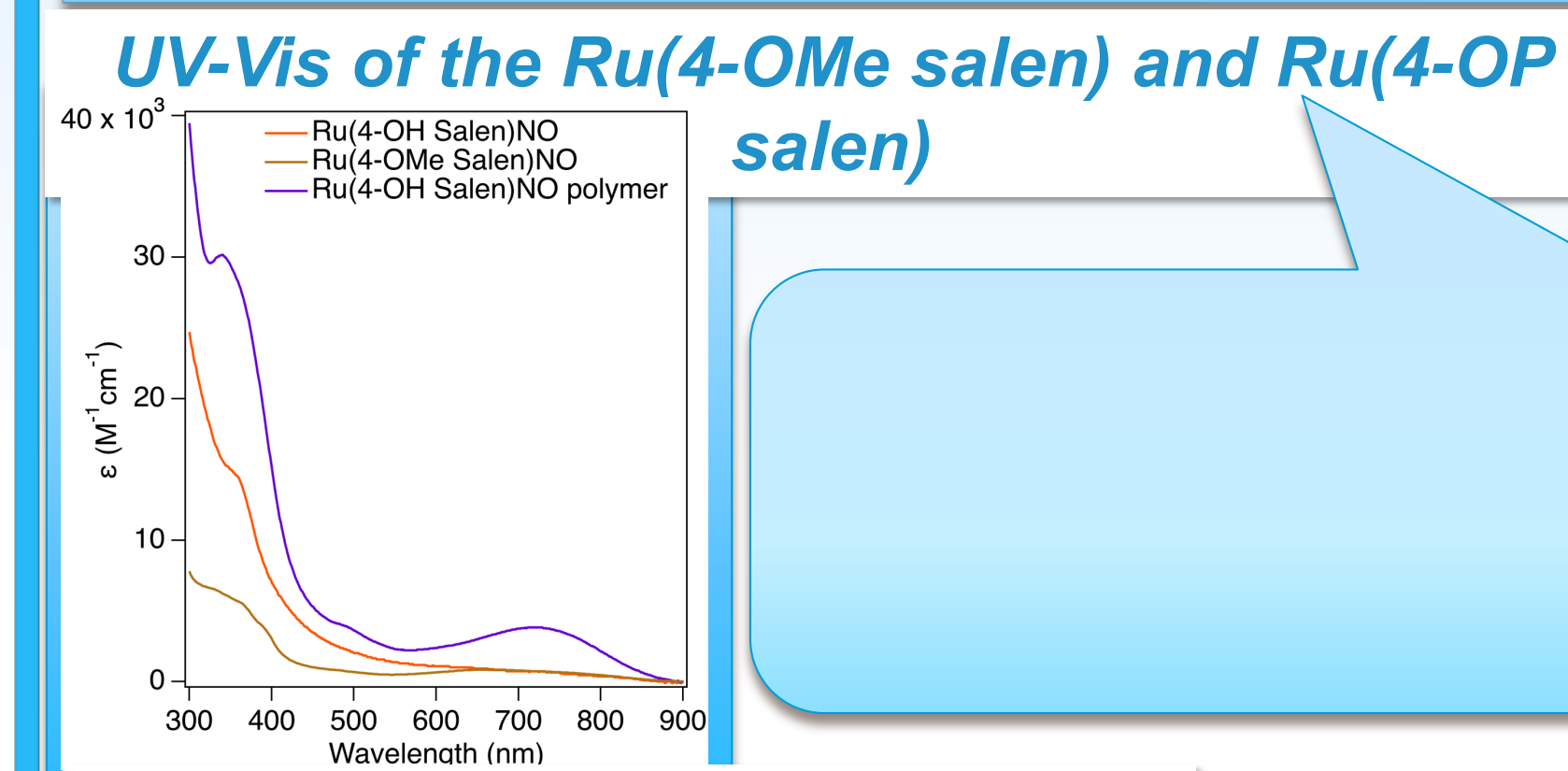
Nitric Oxide plays a variety of roles in biological systems, and the method of quantifying NO release from solid films



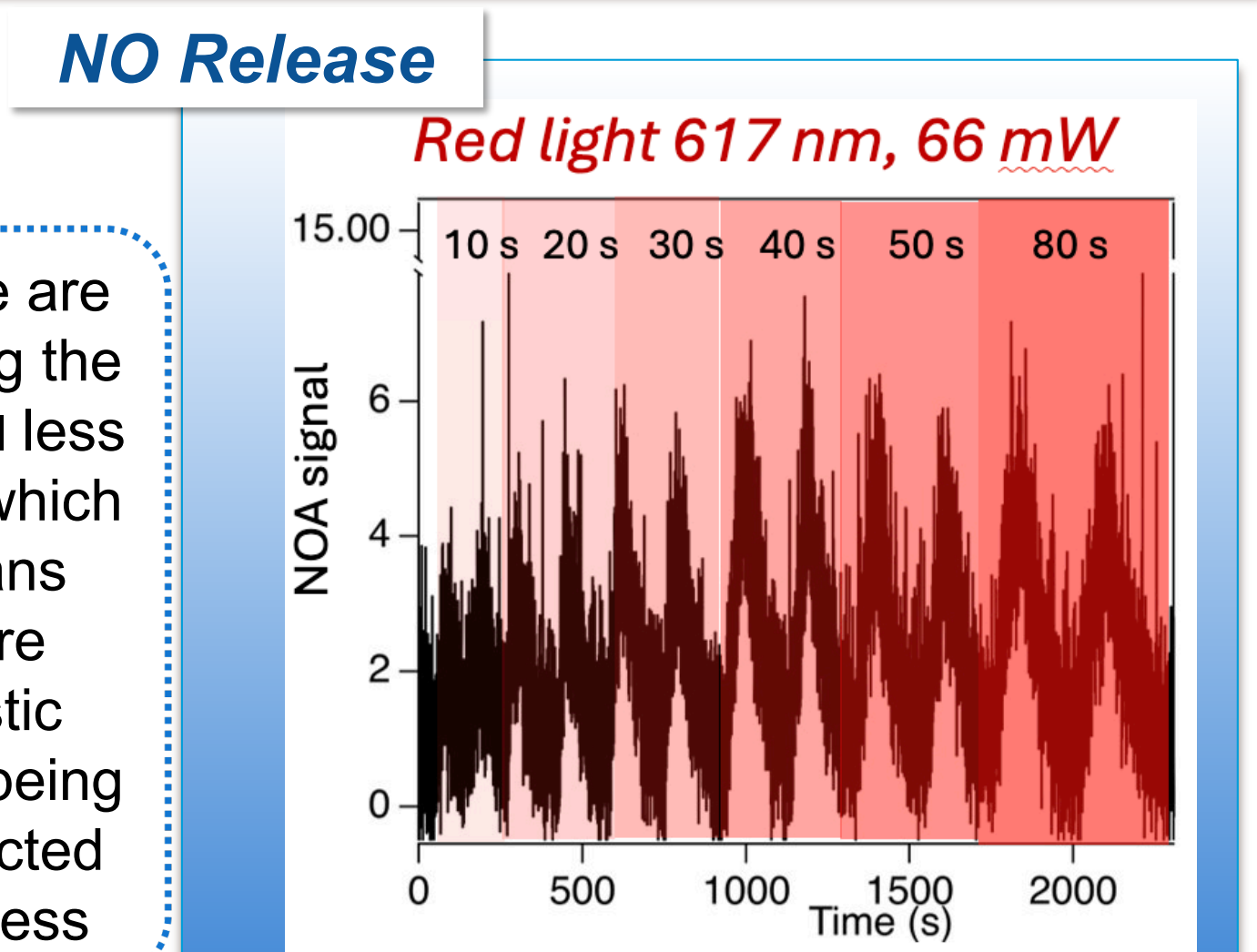
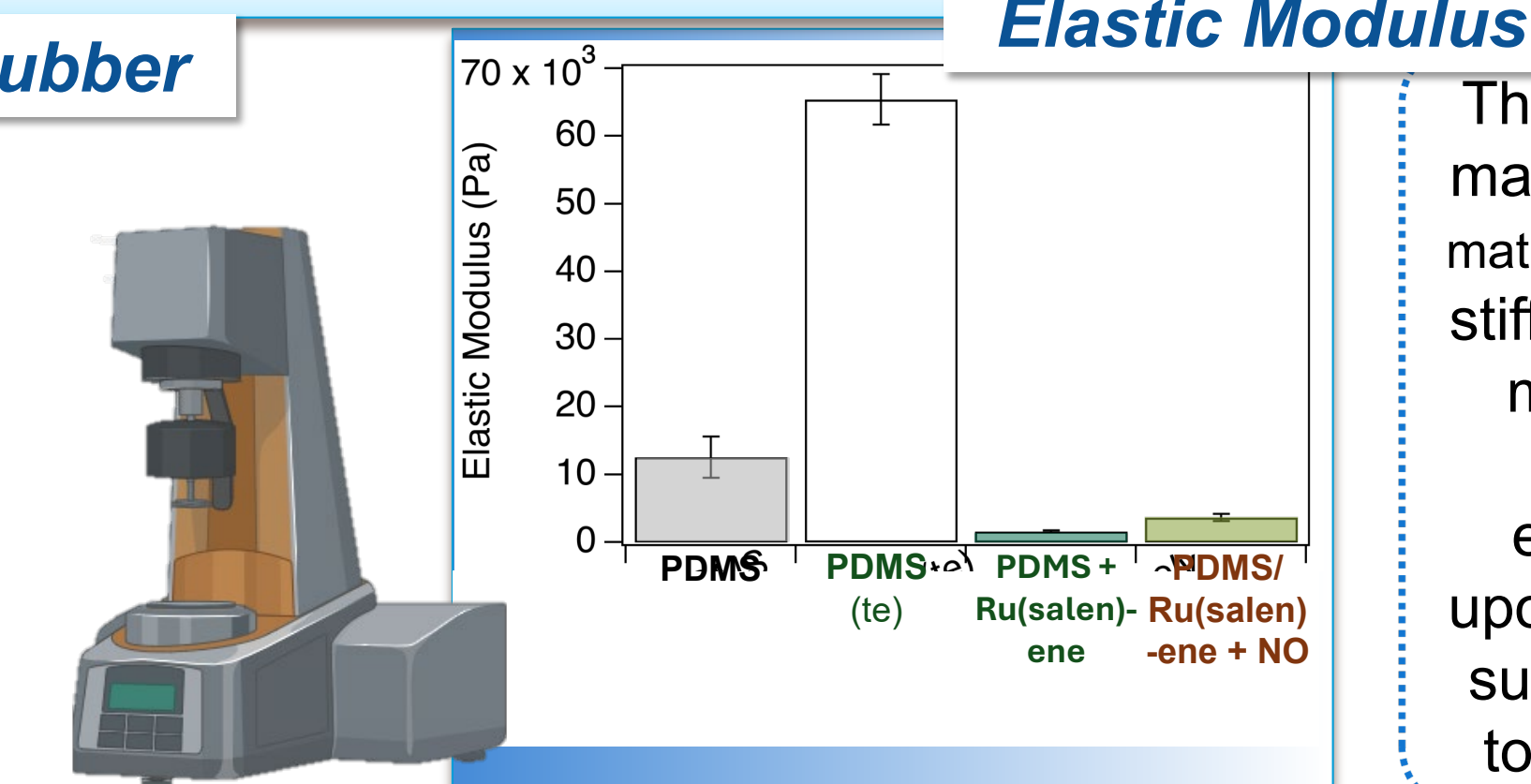
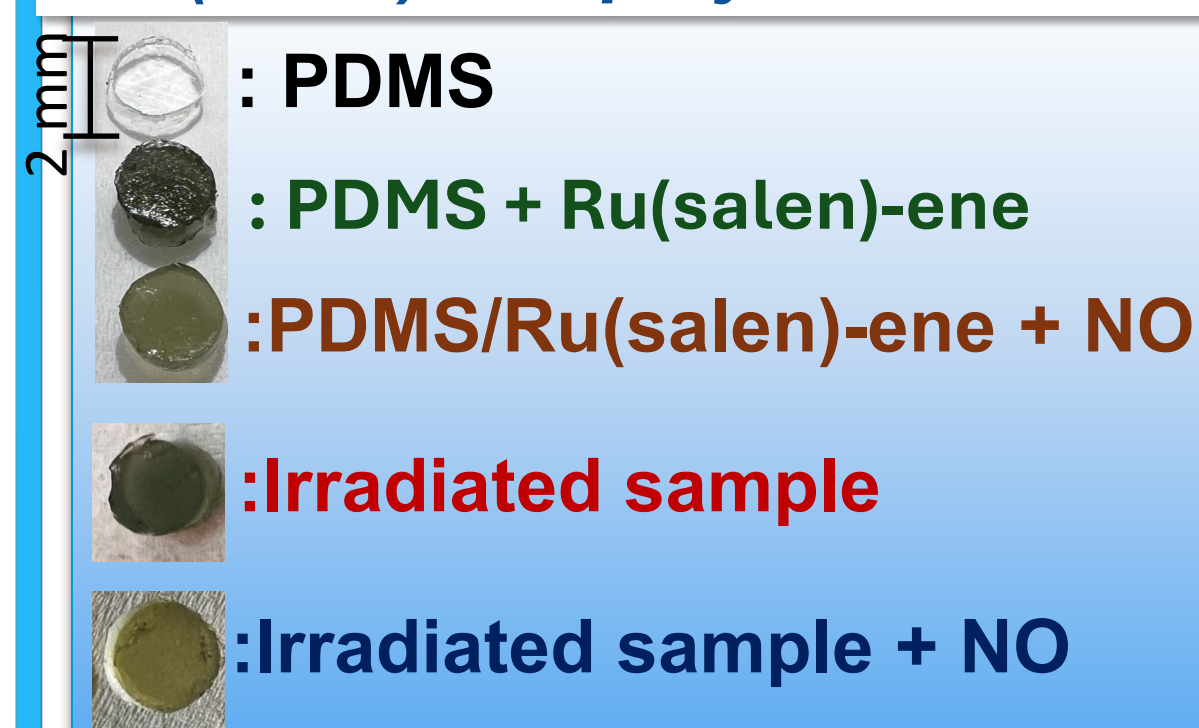
The synthesis of various Ru(Salen)-based complexes as NO donors while red-shifting the absorbances



RuNO(4-OP salen) polymer



Ru(salen)-ene polymer in silicone rubber



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