SURFACTANT-POLYMER INTERACTIONS

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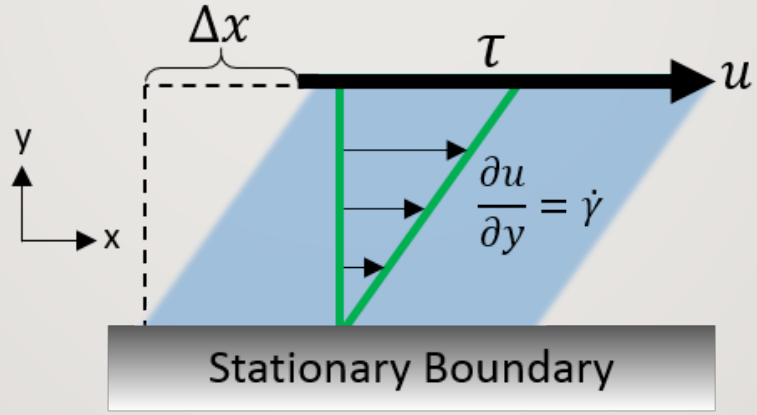
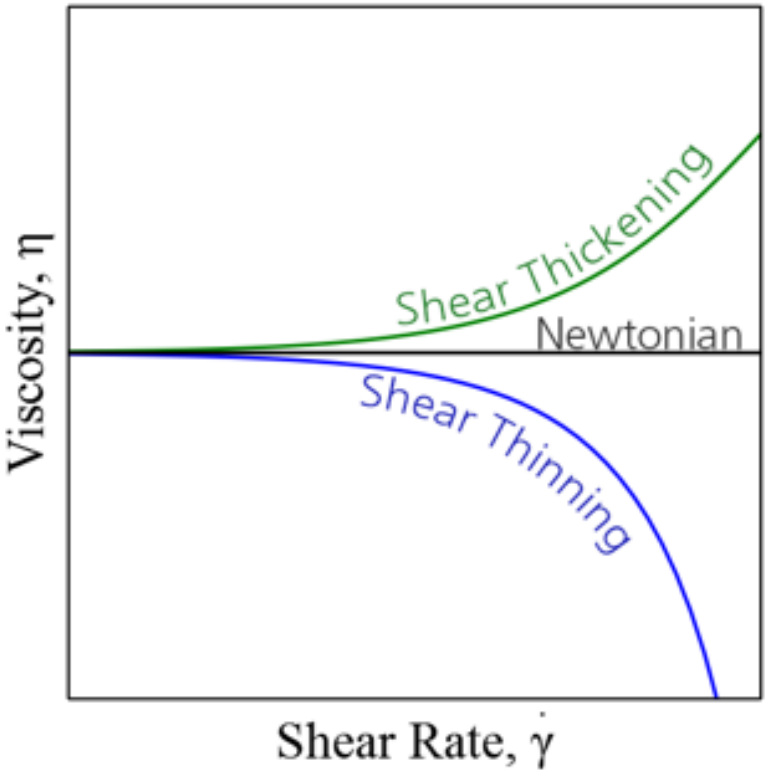
CHRNS
CENTER FOR HIGH RESOLUTION NEUTRON SCATTERING
NSF
NIST
NIST Center for Neutron Research

CUSTOMER SATISFACTION IS THE TARGET IN PRODUCTION

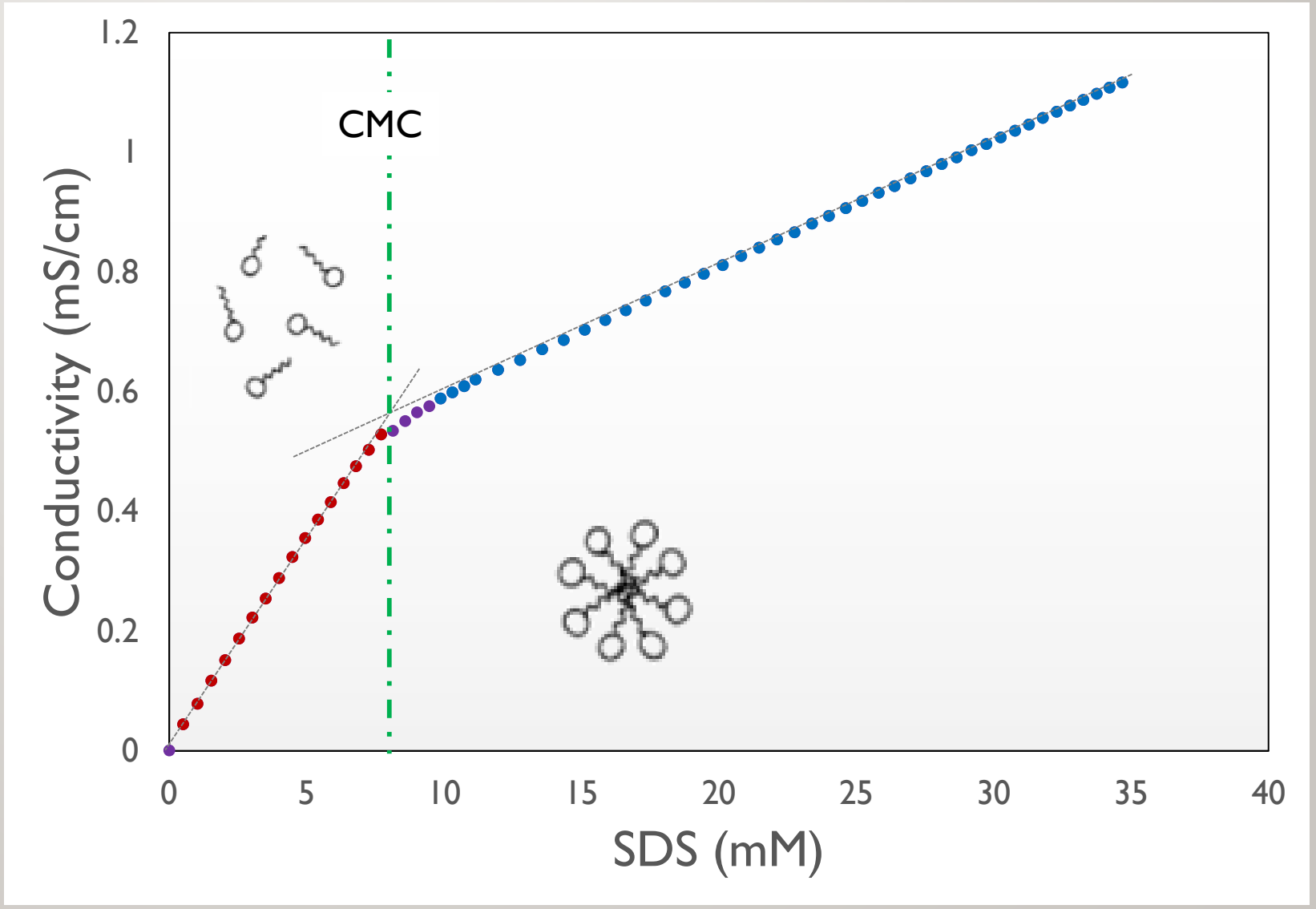


$$\tau = \frac{F}{A} \qquad \dot{\gamma} = \frac{u}{h}$$

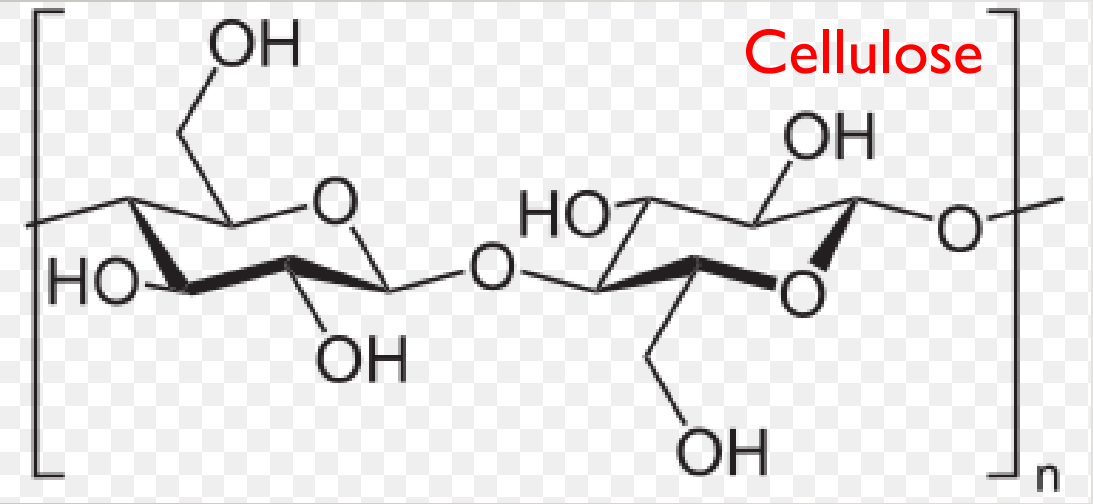
$$\eta = \frac{\tau}{\dot{\gamma}}$$

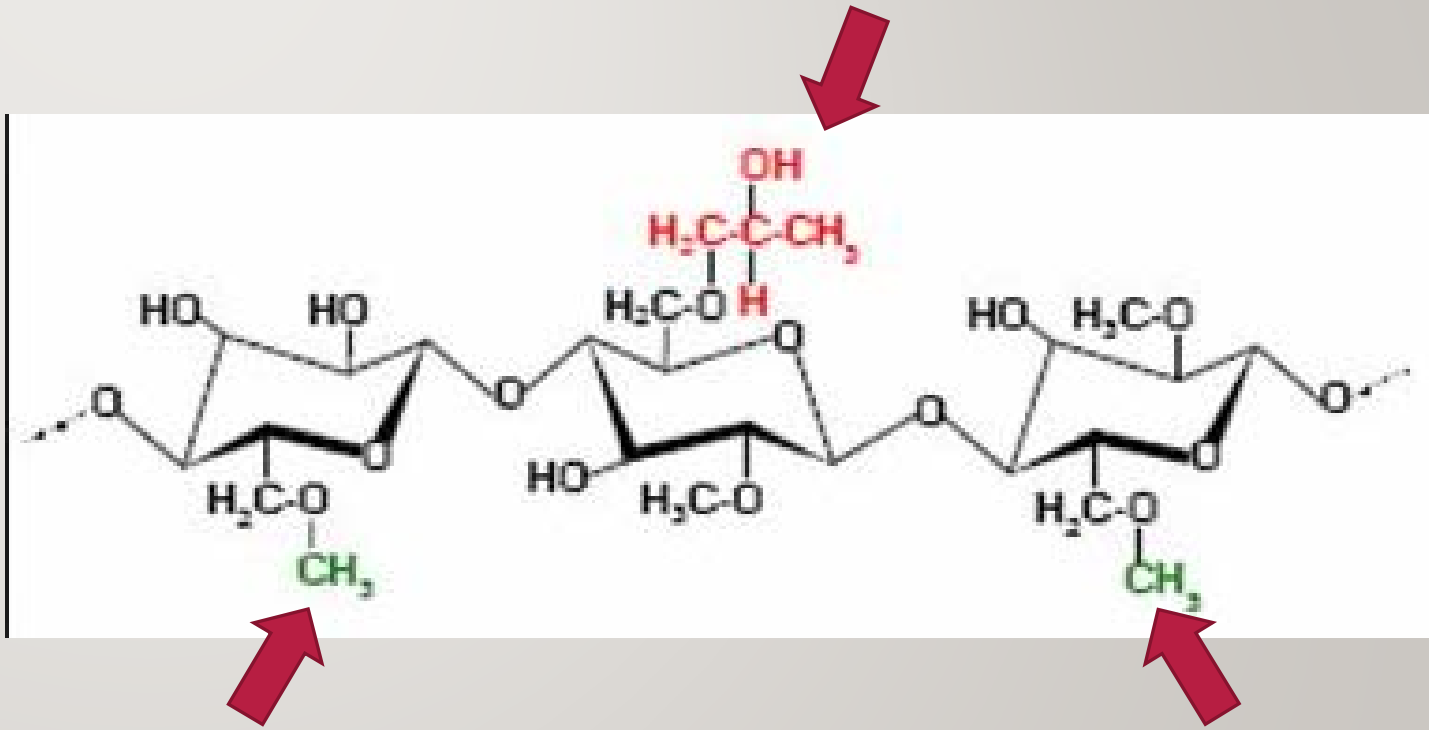


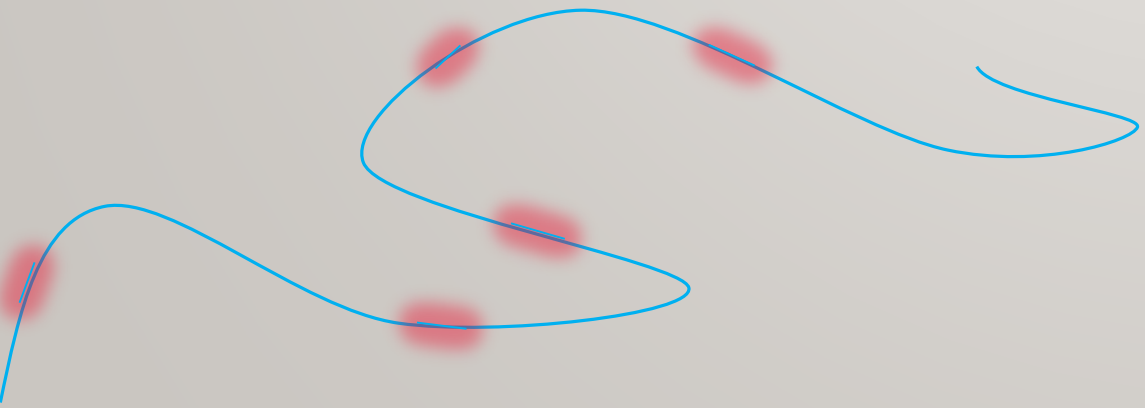
SODIUM DODECYL SULFATE (SDS) AND CRITICAL MICELLE CONCENTRATION (CMC)

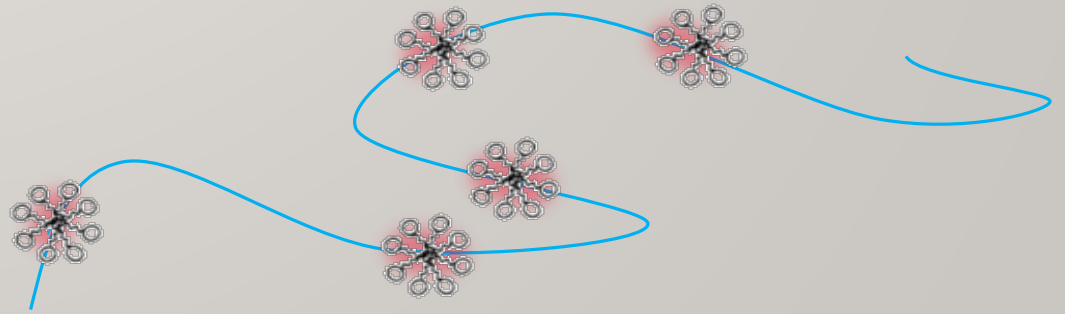


HYDROXYPROPYL METHYLCELLULOSE

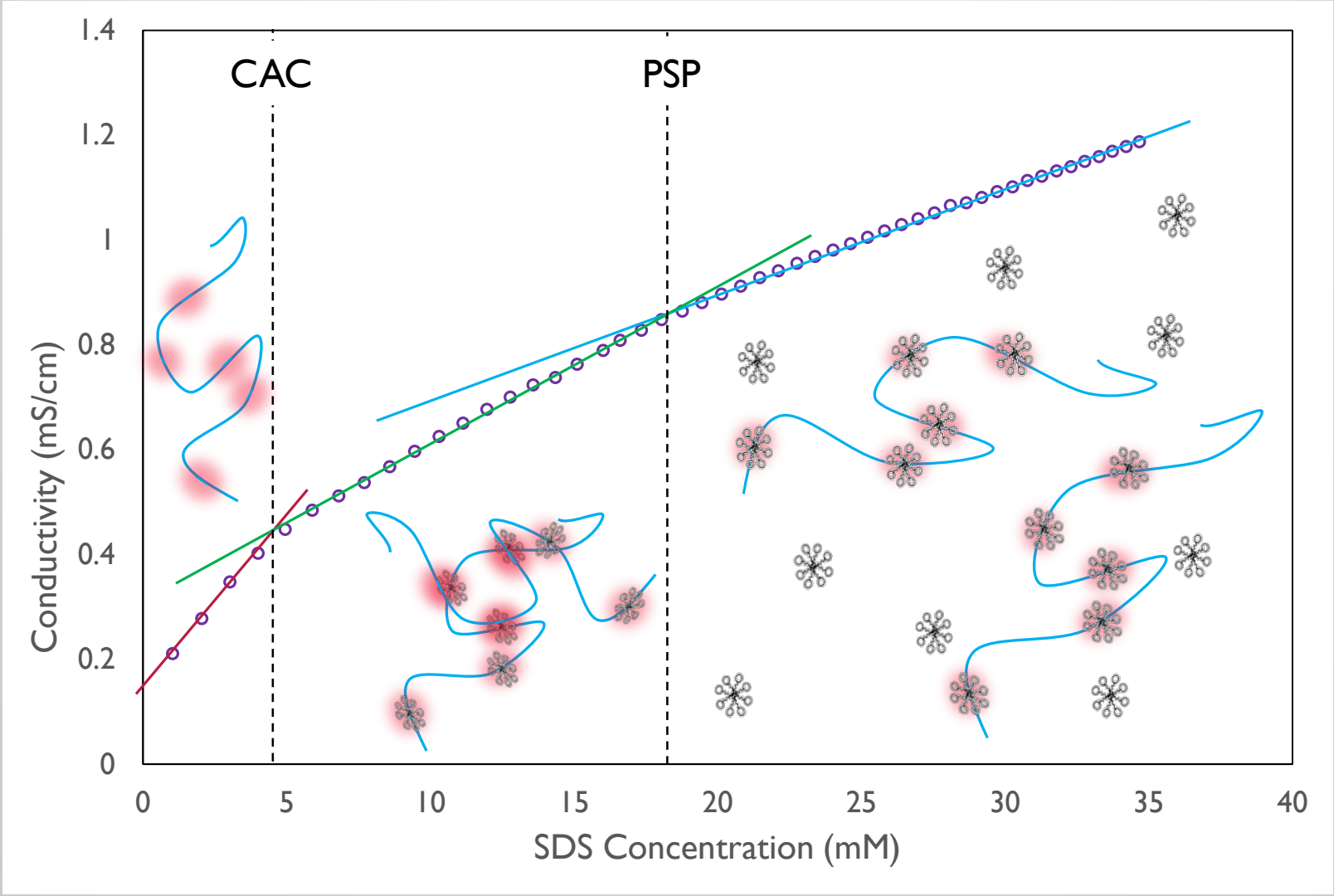






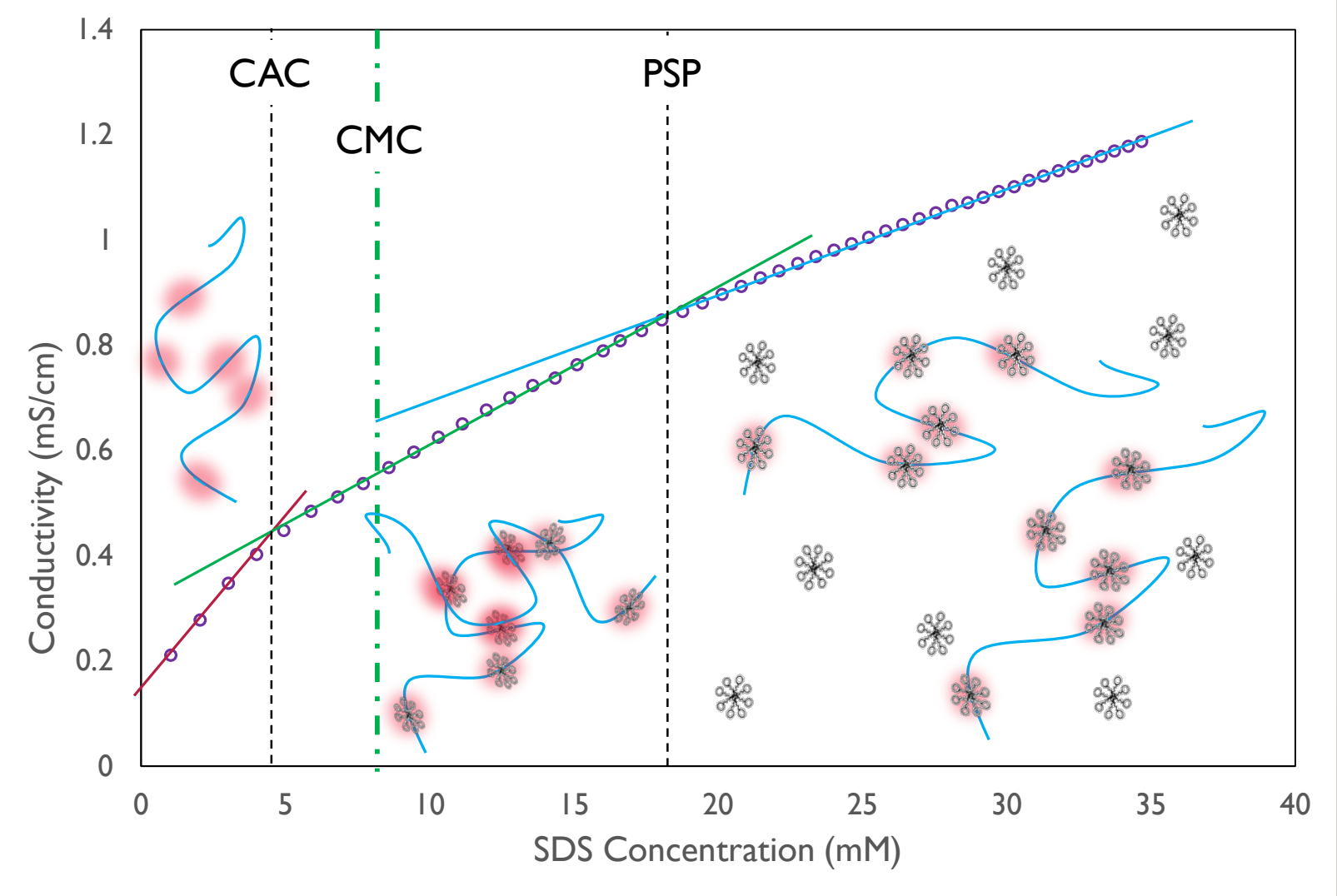


EFFECT OF SDS ON CONDUCTIVITY OF HPMC SOLUTION



CAC - Critical Aggregation Concentration
PSP - Polymer Saturation Point

EFFECT OF SDS ON CONDUCTIVITY OF HPMC SOLUTION



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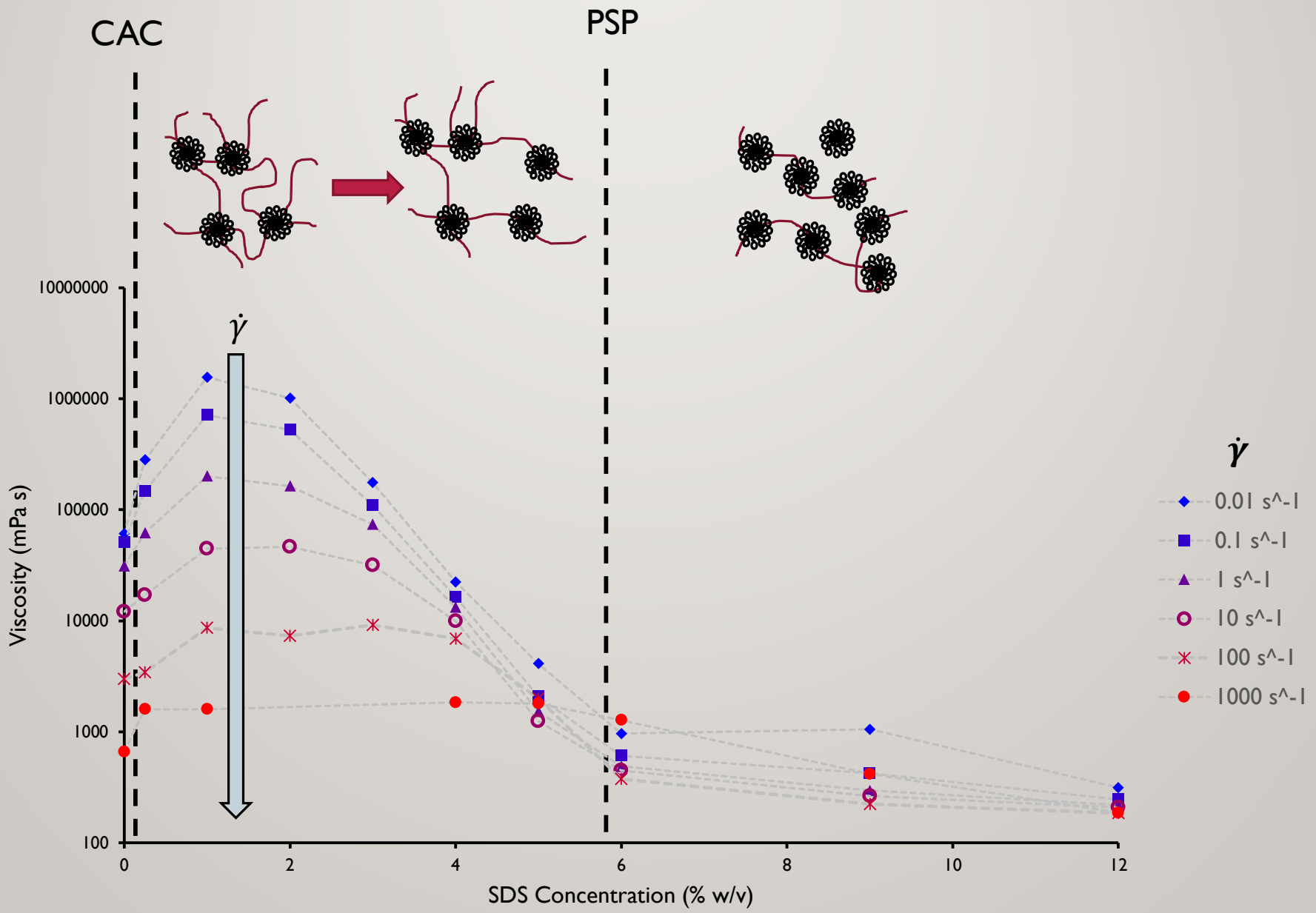
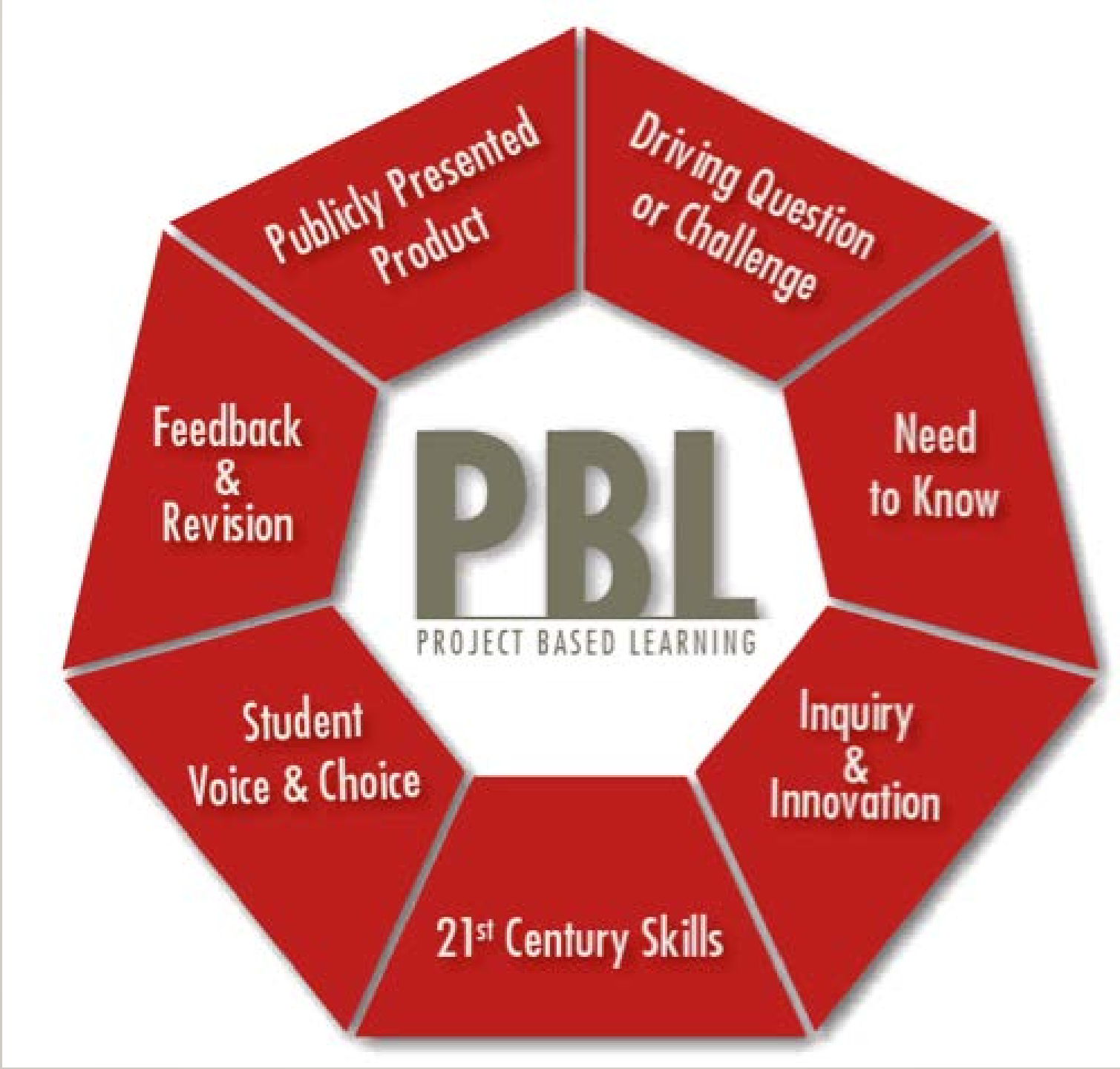
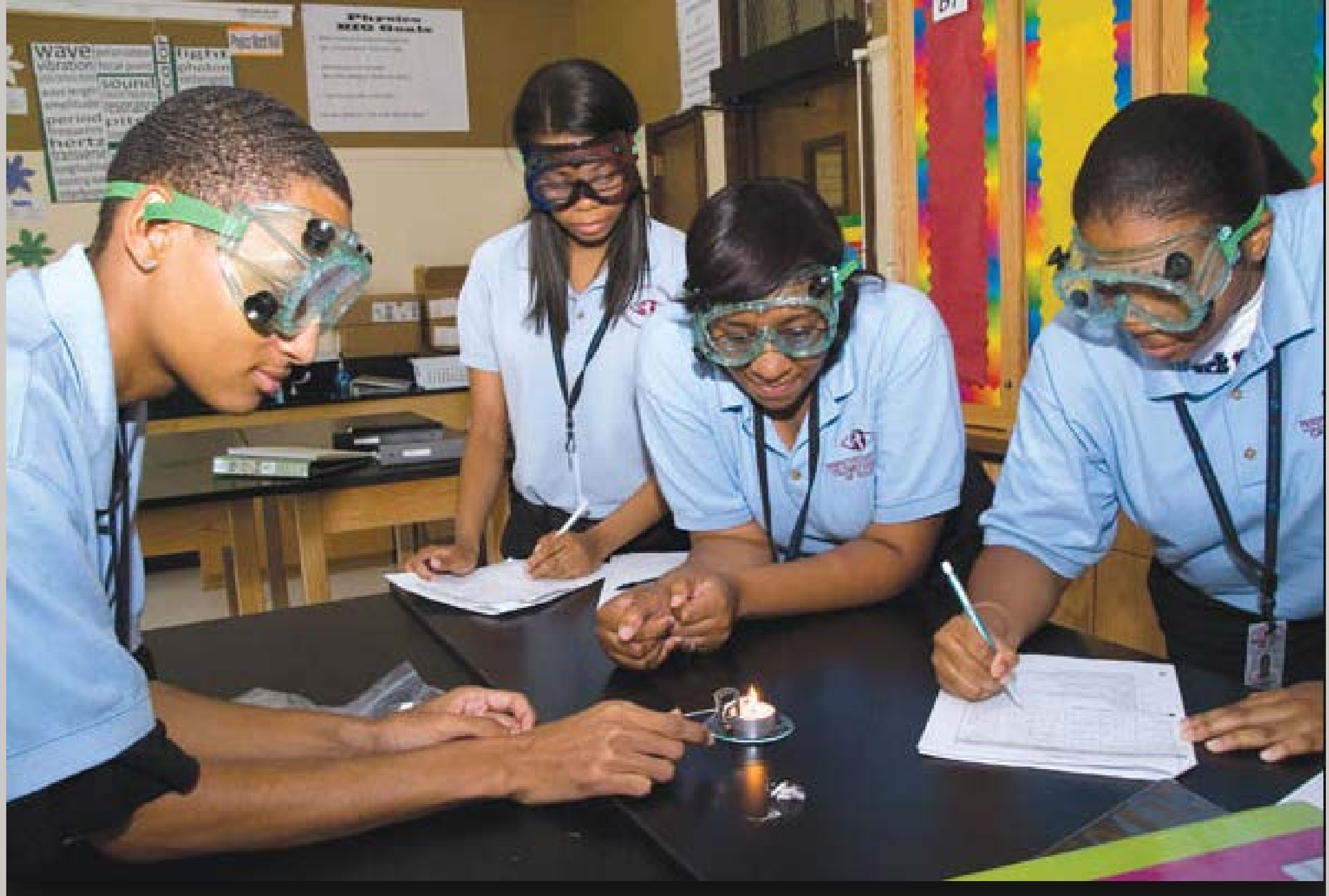
EFFECT OF SDS ON VISCOSITY OF HPMC SOLUTION



STRUCTURE → PROPERTIES → APPLICATION

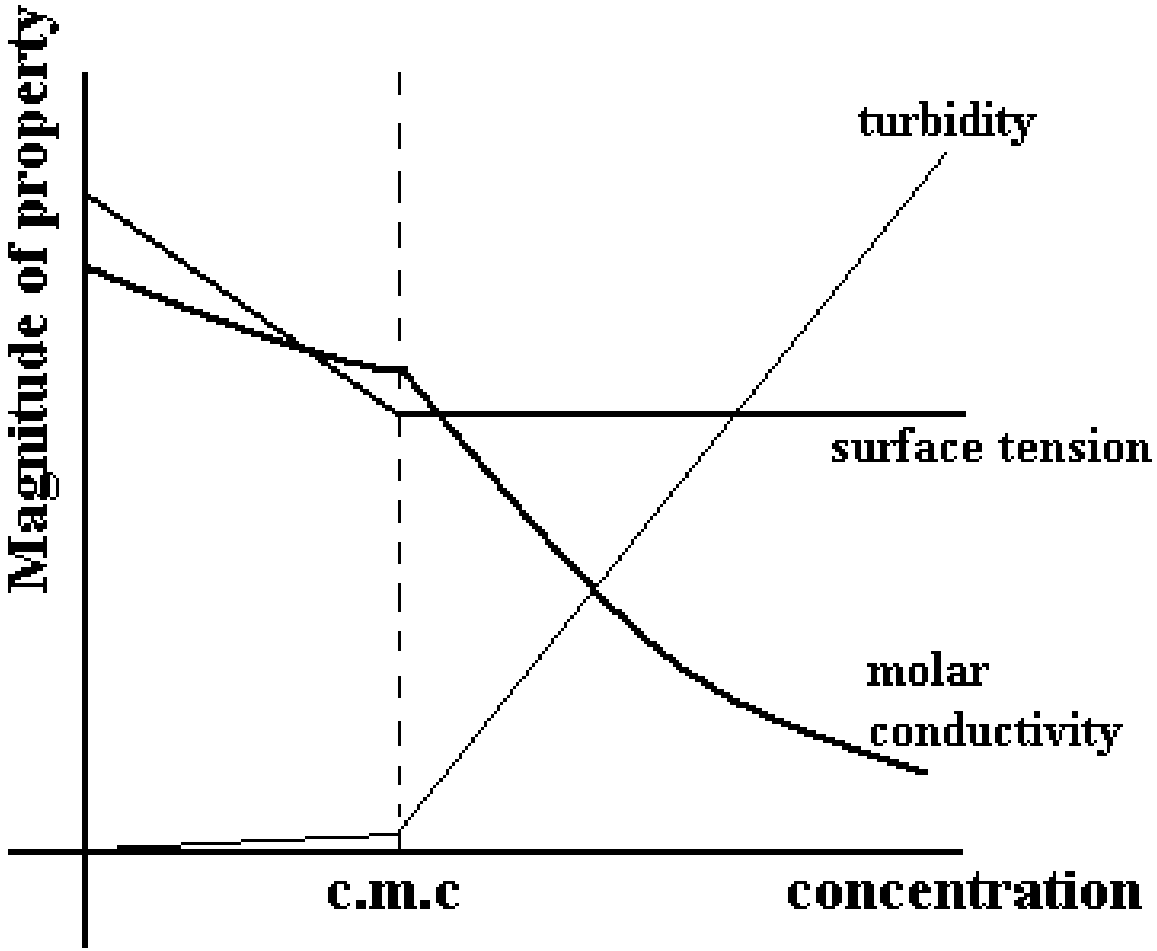
FROM NIST TO THE CLASSROOM


Publicly Presented Product
Driving Question or Challenge
Feedback & Revision
PBL
PROJECT BASED LEARNING
Need to Know
Student Voice & Choice
Inquiry & Innovation
21st Century Skills


Wave
sound

INTERCONNECTED NATURE OF SCIENCE

FROM NIST TO THE CLASSROOM



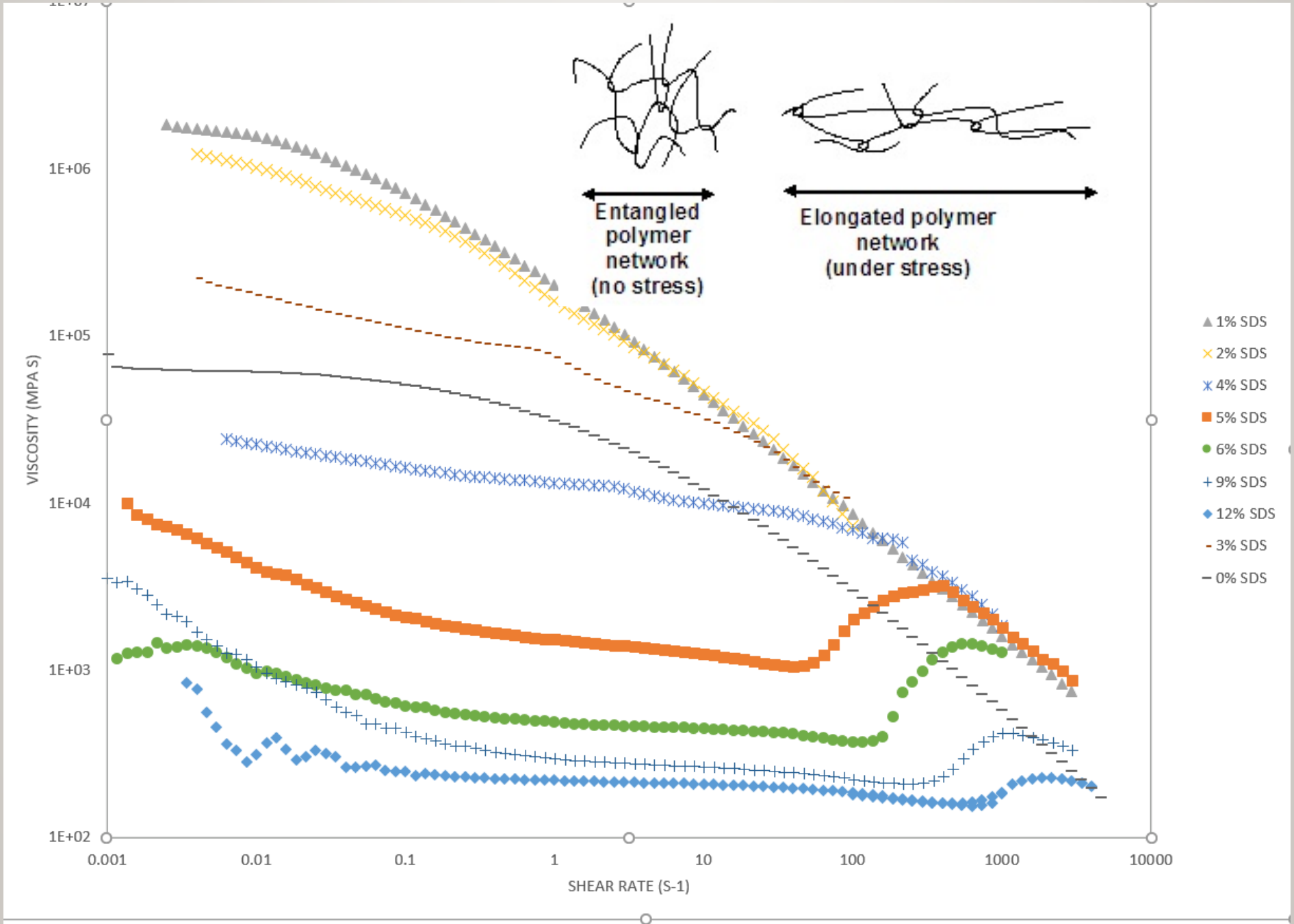
PROJECT IDEAS

- Relate Properties to Structures
- How can a metal needle float on water?
- How do soaps and detergents help us to wash things?
- How can water remain as a liquid at temperatures more than 20 ˚C below its freezing point?
- How can we dissolve large amounts of oil in water using just a trace of a third component?

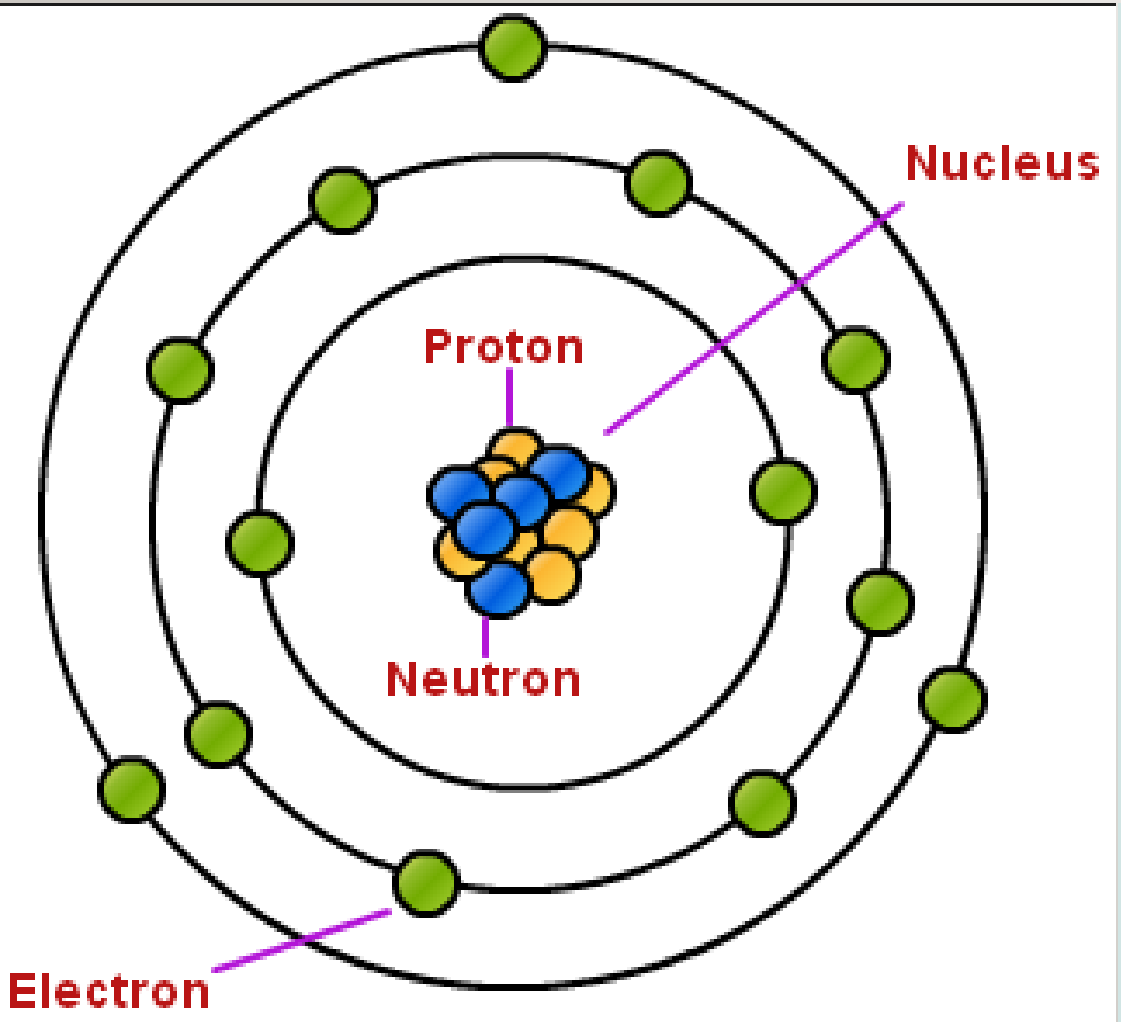
THANK YOU!!

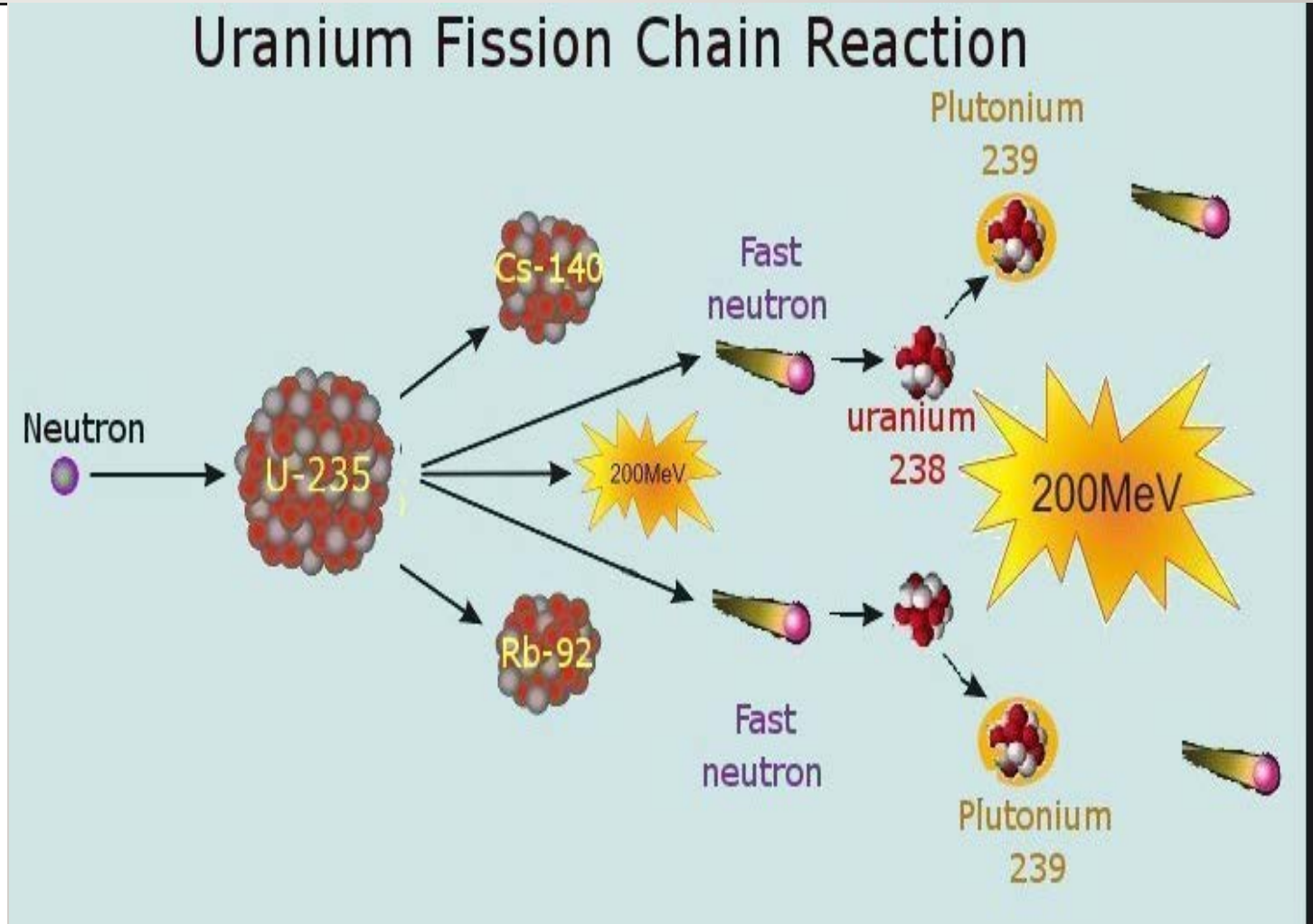
- Yamali Hernandez
- Katie Weigandt
- Daniel Seeman
- Douglas Scott
- Javen Weston

RHEOLOGICAL CHARACTERISTICS



SANS
DATA COLLECTION/REDUCTION/ANALYSIS





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