**Green chemistry** 

**PPG Presents “Sustainability” and “Life industry”**

Member introductions:

* Brandon Myrga
  + Chemist I: designs experimental new coatings.
  + Pitt graduate.
  + Was in the laser group during time at pitt. Got to work on polymerization of polymers.
  + Chose to continue with material chemistry major instead of continuing on the pre-med track.
* John Yetter
  + Chemist I: Design resin and coating composition. Tests cookware.
  + Pitt graduate.
  + Used to be an engineering major at Pitt, but chose to continue with material chemistry.
* Adam Powel
  + Designs paint polymers.

About PPG

* Cover a lot of different building sections.
  + Coating on phone screens
  + Buildings
  + Cars
  + Passports
  + Cans we drink from
* How are these business units broken up?
  + Operate in 7 different countries
  + Separates into
    - performance coatings
    - Industrial coatings
    - aerospace , architectural, automotive refinish, protective and marine, and traffic solutions.
  + Automotive OEM coatings, industrial coatings , packing coatings, specialty coatings.
  + Separated based on whether the items are being manufactured on a line or if they require specific attention

Sustainability

* Diane Kappas VP of sustainability

What does ESG stand for and what are its three pillars?

* Environmental social governance
  + Waste reduction.
  + Having a sustainable workforce
  + management
* Targets
  + Reduction in water intensity at priority sites
  + Reduction in greenhouse gasses
  + Reduction is waste intensity
  + Sales from sustainably advantageous products.
* Continued sustainability progress
  + Try to make paints that last longer and cause less waste.
* Case study:
  + Developed a BPA free coating for the inside of cans.
  + Phasing out NMP
  + Make fluoropolymer-free coatings (PFAS-free)
    - Known to negatively impact human health
    - Don’t easily break down
      * Most of the waste comes from manufacturing.
    - Used on non-stick cookware, electronic materials
      * Electronic materials need to be easy to clean optically clear easy to clean
        + Super hydrophobic
        + Hydrophilicity- hides fingerprints
        + Easy to clean
        + Low friction repels hydrogen bonding.
      * Cookware: super hydrophobic coatings with slight oleophobicity
        + Excellent abrasion resistance linear/circular
        + Thermal resistance up to 250
        + Chemical (alkaline resistance)
        + Stain resistance
        + Problems

Silicone coatings in order to lubricate the pans

additives

Working at PPG

* 4 main departments
  + Synthesis
  + Formulation- where paint is mixed
    - Quality assurance, test for weathering and determine the level of composition of components in paint formulation.
  + Physical characterization
    - In depth study of paint processes and properties.
    - Provide design principles.
  + Analytical
    - New method development to better analyze complex systems.
    - Competitive analysis.
* Send out information obtained to different countries that they work with for further testing.
* Many opportunities to move to different places and work in different countries .
* Research capabilities
  + Polymer synthesis
  + Product formulation
  + Coatings applications
    - More engineering based
    - Machines that spray the paint
  + Analytical and physical testing.

**Attendance:**

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