**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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