

Technology Areas	Description
Adhesives	Bonding agents without the use of methylene diphenyl diisocyanate (MDI) and toluene diisocyanate (TDI), generally used in paints, coatings, foams, glues, composite woods and flooring
	MEK-free primers/adhesives
	Reversible/switchable adhesives for applications, including: recycling/recovery, industrial electronics pick-and-place processes, short-term silicon wafer bonding, feet for climbing robots
	Solvent-free, water-based adhesives that do not rely on chloroprene monomer, including applications such as foam to foam, foam to polymer, foam to wood, and metal to metal capabilities in high humidity climate conditions, especially in healthcare
	Wood adhesives that do not contain added formaldehyde
Coating Technologies	Bio-based building blocks (monomers) for resin synthesis – particularly acrylates
	Bio-based resin technologies for high physical durability coatings
	Coating materials with temperature dependent thermal properties
	Nano-cellulose materials with improved transparency
	Water-based resins for low temperature applications
Corrosion Inhibitors	Environmentally compliant alternatives to replace chromates and other heavy metals
Fabric Finishes	Perfluorinated and polyfluorinated compound-free (PFC-free) water and oil repellant surface treatments for footwear and textile
Flame retardants	Non-halogenated flame retardants for polyolefins/ thermoplastics
	Non-halogenated flame retardants that can pass the E84 and CAL133 flammability testing
Fungicides	Bio-inspired adjuvants for fungicides that have a benign toxicological profile
Monomers/Polymers	Bio-based sources of monomers/ polymers, especially for coating technologies
	Low toxicity cross linking agents for polymers
	Non-halogenated V-0 rated* injection molded plastics *UL94 Flammability Testing Standard and ratings
Plasticizers	Non-phthalate plasticizers for electronic products
Polyurethanes	Isocyanate-free polyurethanes
Raw materials for formulated consumer products (including personal care and household products)	Alternatives for cationic poly-electrolytes (quaternary ammonium derivatives or polyquaterniums), generally used as conditioning agents for skin and/or hair cleansing products, that are biodegradable and have low ecotoxicity
	Antimicrobials and preservatives that are non-sensitizing at levels needed for preservation for personal care and household products
	Antimicrobials or technologies that are non-biocidal (do not require registration per the Biocidal Products Regulation [BPR, Regulation (EU) 528/2012])

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2018 Green Chemistry Technology Needs

FOR THE 3RD ANNUAL GREEN & BIO-BASED CHEMISTRY TECHNOLOGY SHOWCASE

AT THE GC3 INNOVATORS ROUNDTABLE, MAY 8, 2018

[Click here for more information on the Technology Showcase](#)

Technology Areas	Description
Raw materials for formulated consumer products (including personal care and household products) - continued from page 1 -	Biodegradable alternatives for polyacrylate-based chemistry, generally used as rheology modifiers or film formers
	Biodegradable chelating agents for personal care and household products including dishwashing and laundry detergents
	Chemistries to prepare ethanolamides without the use of ethylene oxide for improved safety
	Fragrance raw materials that are non-sensitizing with a low risk of biodiversity loss
	Hair conditioning agents that are naturally derived
	Mineral oil alternatives that are biodegradable and/or natural origin oils
	Surfactants for laundry products that can remove hydrophobic soils
	Surfactants that are amphiphilic, especially alternatives to ethoxylated materials
	Surfactants that are anaerobically biodegradable
	Surfactants that are bio-based with low aquatic toxicity
	UV Filters/ light stabilizer ingredients with low aquatic toxicity
Recyclable Latex	Recyclable latex for carpet backing
Recycling Technologies	Recycling technologies for textile blends, including those containing spandex
Solvents	Alternative to N-Methyl-2-Pyrrolidone (NMP) for wafer nano manufacturing applications that does not include γ -Butyrolactone (GBL), Dimethyl Sulfoxide (DMSO), or Dimethylacetamide (DMAc)
	Solvents, especially those with applications in formulated consumer products, coatings, textiles