Science History Institute

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Innovation Day Poster Session Guide

September 9, 2024

In-Person Poster Session, 10:15 AM – 11:15 AM

On Innovation Day emerging industry leaders celebrate today's innovations in the chemical industry and seek solutions for tomorrow's challenges. By taking early-career scientists out of the lab and giving them broader access to their colleagues and to the historical and social context of their research, Innovation Day supports a 21st-century chemical enterprise that addresses society's most pressing needs. Cohosted by the Society of Chemical Industry (SCI) and Science History Institute since 2004, Innovation Day 2024 is a hybrid event held in person and online on September 9. In its 21st year of highlighting breakthroughs and achievement in innovation, our program continues to attract leading speakers and participation from across all sectors of the chemical enterprise.

Innovation Day 2024 features 22 posters. The themes of this year's event explore energy storage and advanced mobility as well as regulatory needs driving the chemical industry.

This Poster Session Guide is organized alphabetically by poster presenter last name. The Guide includes poster presenter name(s), poster authors (when available), company affiliation, and poster title and abstract for each poster. Please use this as a guide to explore posters that will be on display at this year's Innovation Day program.

For full poster citations, please contact the poster presenters.

Organized by Presenter Surname

Presenter Name: Gabriela Alvez, Katie Barta
Authors: Gabriela Alvez, Katie Barta
Company: CPChem
Poster Title: Aromax® Technology
Abstract:
Chevron Phillips Chemical's Aromax® Technology is the premier on-purpose benzene production technology. This technology, paired with the appropriate feedstock, provides a superior ability to convert light hydrocarbons to aromatics and hydrogen. It is best suited to upgrade low-value feedstocks and/or for addressing a hydrogen (H2) shortage. The Aromax® Process selectively converts light paraffins and naphthenes to hydrogen and aromatic products utilizing conventional fixed-bed reforming equipment. The Aromax® Process is the first reforming process based on a zeolitic catalyst. It is best suited for converting C6–C8 hydrocarbons. The process utilizes a proprietary catalyst technology. The catalyst has exceptional selectivity for converting C6 and C7 paraffins and naphthenes to benzene, toluene and hydrogen. The process also includes a high-efficiency sulfur control system to eliminate catalyst poisoning by sulfur.

Presenter Name(s): Clayton Cuddington
Authors:
Company: ExxonMobil
Poster Title: Next Generation Polymerized Hemoglobins for Use in Transfusion Medicine
Abstract:
During surgery or following traumatic injury, patients require a transfusion to minimize blood volume loss, hemorrhagic shock, and ischemic injury. Traditionally, this transfusion consists of red blood cells (RBCs); however, RBC therapies are marred by a scarce supply, short storage time for donated units, and the need to type match donor-patient transfusions to avoid adverse reactions. Polymerized hemoglobin (PolyHb) is a promising RBC substitute that can mitigate many of these RBC shortcomings while still providing oxygen transport capabilities to prevent hemorrhagic shock and ischemic injury. Before now, PolyHb has been hampered by an inability to scale-up efficiently and a propensity of low molecular weight oligomers (LMWO) to extravasate out of circulation. This poster displays new methods for synthesizing and purifying PolyHb to enable the scale-up of a high purity RBC substitute that does not require type matching and can be stored indefinitely for deployment when RBCs are unavailable. This poster also details selected biophysical properties of the PolyHb to highlight how it is expected to perform in vivo compared to traditional RBCs and other RBC substitutes.

Presenter Name: Martin Deetz
Authors:
Company: DuPont
Poster Title: Water Treatment for Hydrogen Production
Abstract:
Green Hydrogen, or hydrogen produced from water by renewable energy powered electrolysis, has emerged as a key technology to enable global decarbonization. Electrolyzers, which convert water to hydrogen, require a constant supply of ultrapure water for robust operation. The electrolyzer equipment represents the highest cost component of the system, and water impurities can have a major impact on the lifetime and efficiency of its operation. In this poster, we discuss the water treatment challenges and

solutions for maintaining ultrapure water under the challenging conditions of the system to ensure a reliable supply of hydrogen.

Presenter Name(s): Theresa Feltes; Jeremy Praetorius
Authors: Theresa Feltes; Jeremy Praetorius
Company: Chevron Phillips Chemical
Poster Title: A History of Innovating Differentiated Products for a More Sustainable Future
Abstract:

At Chevron Phillips Chemical, our Research and Technology organization continues to build on our pioneering legacy to propel innovation and sustainability throughout the company and across the industry. We take pride in serving industries that can positively impact people around the globe.
Plastics play a crucial role in our society through products that preserve food and water, protect medical instruments, boost vehicle efficiencies and impart countless benefits to our daily lives. At CPChem, we explore and advance opportunities to incorporate sustainability throughout the manufacture, design and application of our products. Our robust product portfolio accommodates more than 70,000 consumer and industrial applications. We work to harness the benefits of plastics for more than eight billion people who share our planet today, and we innovate to minimize our footprint for the billions we will share it with tomorrow.

Our bimodal polyethylene technology allows us to develop new and enhanced products to meet these goals and help drive sustainable solutions for the needs of tomorrow. From pipes that help deliver water and infrastructure, to polymers that improve the sustainability of rigid packaging through their superior properties, CPChem continues to drive value through innovation.

Presenter Name(s): Rishi Gupta
Authors: Rishi Gupta, Sara Yacob
Company: ExxonMobil
Poster Title: **Advanced Recycling: Supporting a More Circular Economy**
Abstract:

Plastics play a pivotal role in making modern life possible, but challenges continue to exist with regards to the handling of plastic waste, as roughly 3 billion people lack access to controlled waste disposal facilities. ExxonMobil has developed its proprietary Exxtend™ technology, an advanced recycling option which aims to accelerate progress towards a more circular plastic economy. Exxtend™ can widen the range of plastic waste which can be recycled. Exxtend™ is now operational at ExxonMobil's Baytown facility and aims to develop 500 kTa of advanced recycling capacity by 2027. ExxonMobil's advanced recycling facilities and processes are independently certified via an internationally recognized third-party system called ISCC PLUS mass balance accounting. This auditable methodology tracks a certain amount (by mass) of plastic waste that we process through our advanced recycling process, less manufacturing losses, and attributes that amount (by mass) to new, virgin-quality plastics that we sell as "certified-circular polymers."

Presenter Name: Chihhung Ko
Authors:
Company: Eastman

Poster Title: Development of Ultra High Purity and Sustainable Solvents for Semiconductor Processes

Abstract:
Wet chemicals play a critical role in coating, etching, stripping, and cleaning processes throughout semiconductor manufacturing. However, the continuous shrinking size of transistors in chips and rising environmental, health, and sustainability awareness pose significant challenges in chemical engineering design and solvent selection. Two solvents, isopropanol (IPA) and N-butylpyrrolidinone (NBP), are selected as examples to address these concerns. IPA is widely used in the final stage of the cleaning process for removing organic compounds, water, and particles, where the ultra-high purity of IPA ensures pristine surface quality. Common contamination sources and failure modes will be discussed to ensure long-term reliability. On the other hand, NBP is a promising candidate designed to replace reprotoxic dipolar aprotic solvents such as dimethyl sulfoxide (DMSO), dimethylformamide (DMF), dimethylacetamide (DMAc), and N-methylpyrrolidone (NMP) for photoresist stripping. Comparative analyses using Kamlet-Taft (K-T) and Hansen Solubility Parameters (HSP) with conventional solvents reveal NBP's formulation strategy. Our research encompasses purification methodologies, polymer solubility, etching rates, heat stability, and proper storage practices, paving the way for the accelerated integration of NBP within semiconductor applications.

Presenter Name: Julia Kozhukh
Authors: Julia Kozhukh, Christina Older, Margaret Gerthoffer, Bolun Hu, Mark Guidry, Audrey Wipret, Guy Mommens, Jessica Klinkenberg, Todd Pangburn, Michele Vigliotti, Xavier Thomas
Company: DuPont
Poster Title: Design and Synthesis of Copolymer Adhesives for Advanced Medical Applications

Abstract:
Advanced medical grade skin adhesives are formulated with properties that aim to balance the tackiness to skin over a set period of time while still exhibiting an atraumatic, painless removal. Pressure-sensitive adhesives are currently utilized for long-term wear applications over the span of days to months whereas soft skin adhesives are designed for immediate tack with shorter term wear. Herein, we will discuss the advancements in designing adhesives composed of newly targeted copolymer backbones that exhibit long-term wearability, residue-free removal, breathability, and repositionability after application. Such formulations are tunable from commercially available monomers to achieve a balance of appropriate rheological behavior, cohesive strength, and skin adhesion through intuitive chemical structural variation. Tuning of the hybrid copolymer adhesive behavior will be illustrated beyond monomer selection into polymer macro characteristics, such as innate crosslinking and discrete molecular weight control. Overall, the insights within this discussion will point to the possibilities of forming new copolymer adhesives that are gentle on skin for advanced wound care applications.

Presenter Name(s): Conor Kulczytzky
Authors:
Company: Chemours
Poster Title:

Abstract:
The poster will discuss the benefits of the dry electrode process in manufacturing of Li ion batteries. It will cover how the dry electrode process enables a more sustainable solution that not only reduces the cost of manufacturing but also aids in improving the performance of batteries. The poster will provide an

overview of the dry electrode process in battery manufacturing, illustrating the key steps involved from raw material preparation to electrode fabrication. It will outline how this innovative approach impacts the production workflow and output quality. Furthermore, the poster will introduce the capabilities of the Chemours dry processing lab, highlighting its comprehensive approach to battery production and its role in advancing sustainable battery manufacturing. It will present information on the lab's equipment and facilities, covering various stages of the manufacturing process and describe how these resources contribute to research, development, and sustainable small-scale production of high-quality battery cells.

Presenter Name: Sam Lim, James Padaguan
Authors: Sam Lim, James Padaguan
Company: Dow
Poster Title: Innovative Approaches to Road Safety: Enhancing Traffic Lane Markings through Digital Technology

Abstract:

Durable, retroreflective traffic lane markings are essential for road safety. To improve road safety, the Dow Coating Materials has leveraged digital technology and provided innovative solutions in facilitating advanced mobility and influencing the road markings industry. First, a pioneering user-friendly dashboard was created to consolidate waterborne traffic paint specifications published by each state Department of Transportation (DOT) in the US. Among other capabilities, this digital tool enables searching and comparing specifications between states. It is envisioned to facilitate the bidding process for pavement marking materials, promote faster product innovation, and shape policy formulation that will ensure a satisfactory level of traffic paint performance. Furthermore, a computer algorithm was developed to expedite the evaluation of road markings subject to accelerated wear testing. This could replace traditional, non-quantitative comparisons and subjective test methods and enable improvements in traffic paint durability and retroreflectivity. Such properties are critical for real-time lane detection to realize autonomous mobility. These digital innovations hold promise in elevating the level of regulations and enhancing reliability of performance assessment towards safer roads.

Presenter Name: Stephanie Marxsen
Authors: Stephanie F. Marxsen, Joseph A. Throckmorton, Tzu-Pin Lin, and Carlos R. López-Barrón
Company: ExxonMobil
Poster Title: Tuning Processability of Isotactic Polypropylene (iPP) Through Blending with iPP Ionomers

Abstract:

Isotactic polypropylene (iPP) is one of the most ubiquitous polyolefin materials used worldwide. As a result of its high chemical and thermal stability and excellent mechanical properties, iPP has found applications in industries ranging from packaging and hygiene to automotive and electrical. Despite its broad usage, conventional iPP cannot be processed under strong extensional flows as it lacks melt strength due to its linear architecture. One way of improving the extensional processability of iPP is through introduction of ionic crosslinks. For instance, our group has recently synthesized iPP ionomers with a small amount (< 0.2 mol%) of aluminum carboxylate (–CO2Al) groups pendant to the iPP backbone. Due to the small amount of ion groups, these iPP ionomers maintain the crystallinity and mechanical properties of linear iPP, while also having significantly improved processability under extensional flows.[1] In the present work, we investigate the effect of blending iPP ionomers with linear iPP on rheological, thermal, and structural properties, with the aim of better understanding the relationship between ion group content and

processability. Such blending enables straightforward alteration of ionic strength, allowing in turn the ability to tune extensional strain hardening and other rheological properties required for effective processing under extensional flows. Remarkably, strain hardening behavior matching that of industrially available long-chain branched (LCB) iPP (the current industry approach for enhancing melt strength of iPP) processed under the same conditions can be achieved in blends containing only 25% iPP ionomer. One can thus foresee the incorporation of these iPP-ionomers as rheological enhancers to existing iPP processing operations.

Presenter Name: Shannon McGee
Authors:
Company: Quaker Houghton
Poster Title: Metal-Working Fluid Performance Metrics for Sustainability
Abstract:
In the metalworking fluid industry, accelerated sustainability adoption is being driven by stricter regulations, customer demand and the drive for innovative technologies. There are many aspects to sustainability, with many focusing on the environmental factors such as GHG emissions and carbon footprint through formulating with bio-based raw materials. However, we can also look at increasing performance of metalworking fluids as a sustainability metric. There are performance-based sustainability metrics for companies to focus on such as energy efficiency, productivity, longevity, and eliminating harmful chemicals for human health and safety. By focusing on the potential capabilities in improving sustainability for application, in addition to the potential capabilities in formulation, we can innovate sustainable solutions to support the community on their sustainability agendas. In this poster, we demonstrate comparisons between an older generation metalworking fluid and a newer generation metalworking fluid in different applications to highlight that technological improvements in performance relate to sustainability metrics.

Presenter Name(s): Abigail Meyer
Authors:
Company: Quaker Houghton
Poster Title: Use of Keyence VHX Digital Microscope to Determine Composition and Microstructure Changes in Polymer Quenched AISI 1060
Abstract:
With increasing stringent environmental regulations, there is a focus among heat treaters to move from proven oil-based heat treat products to more sustainable but less commercial acceptable water based quenchants. A research project was completed with several polymer materials that were used to quench AISI 1060 with the goal of this project was observing the changes in microstructure and composition of the material using our new Keyence VHX Digital Microscope. The technology of the microscope will allow us to measure elemental composition at different depths and sections of the material. In addition, the microscope will allow us to compare the changes in microstructure between quenched and unquenched samples as it can also be used as a metallographic scope. The digital microscope will allow us to quickly measure the samples and provide data that can be used to confirm water-based polymer quenchants are suitable replacements for oil-based products.

Presenter Name(s): Ellen Qin
Authors:

Company: DuPont
Poster Title: DuPont™ Vespel® for Hydrogen and Electric Vehicle Industries and Applications
Abstract:
In recent years, there has been renewed interest in the adoption of hydrogen as a clean energy source and the introduction of electric vehicles (EVs) to reduce greenhouse gas emissions and achieve a more sustainable future. These new technologies bring a set of unique challenges and technical specifications that must be met. The design engineer must select existing materials or design new materials to solve familiar sealing, wear, and friction problems, but these materials also need to perform at both the elevated temperatures and cryogenic temperatures characteristic of hydrogen. For EVs, the design engineer needs to select materials that can withstand the demanding conditions of electrification including higher torque, increased rotational speed, and high temperatures, all while maintaining a compact and lightweight design. For 60 years, DuPont™ Vespel® polyimide parts and shapes have excelled in extreme conditions and applications where thermal stability, electrical properties, and excellent wear and friction performance are necessary. The Vespel® portfolio offers a range of high-performance materials that enable customers to meet the challenging problems encountered by the hydrogen and electric vehicle customers and is a material of choice in these demanding applications.

Presenter Name: Sara Reynaud
Authors: Sara Reynaud & Dana Garcia, Mark Lavach & James Henry
Company: Arkema
Poster Title: Applications of Coupled Rheology – FT-IR to Polymer Analyses
Abstract:
The advancement of coupled rheological spectroscopic techniques opens wide opportunities to study in situ structure-property-processing-performance relationships of polymers under dynamic conditions. We explored the use of combined Rheo-IR in the attempt to understand the mechanisms behind phenomena such as shear instability, crystallization pathways, structural changes under processing conditions. Here, we describe the mechanisms of internal lubrication due to the addition of polymer process aids (PPAs) to polyethylene (PE). We show that addition of ppm level of PPAs into PE drastically improves the quality of extrusion. The lubrication phenomenon is due to the migration of PPAs particles to the metal surface of the die promoting wall slippage. Although the PPAs migration mechanism at high shear rates is well understood in the industry; little is known about the effect of PPAs on the flow behavior of polymer melts processed at relatively low shears. Our Rheo-IR findings indicate a good correlation between transient viscosity and evolution of the CH2 band in presence of PPAs. Based on the conformational changes and the increase in PE mobility observed in the IR spectra, we suggest a new internal lubrication mechanism that involves the diffusion of PPA droplets across the polymer matrix instead of migrating to surface.

Presenter Name: Ian Robertson
Authors:
Company: Dow
Poster Title: Liquid applied sound damping coatings optimized for next-generation vehicles
Abstract:
Automotive applications have high requirements for interior acoustics. A vehicle's drive train, the road under its wheels, and the wind passing around its surface all work together to create noise and vibration that may be uncomfortable for passengers. Vehicle engineers address these challenges with a variety of acoustic materials to create a quiet and comfortable ride. For example, liquid applied sound damping (LASD) coatings are applied to rigid structures, such as sheet metal in a vehicle's body, to reduce resonant

vibrations through viscoelastic dissipation. The polymeric component of these coatings is tuned for maximized damping in its application environment, while its waterborne design enables a customizable spray-application process. LASD coatings typically target low frequency (200 Hz) vibrations for internal combustion engine (ICE) applications, but as battery electric vehicles (BEV) become more common, additional high-frequency vibrations must also be mitigated. This poster will provide background on LASD coating design and show how polymer concentration, polymer/mineral interactions, and coating weight influence damping performance of LASD materials at a range of frequencies relevant to both ICE and BEV applications.

Presenter Name: Michael Rodig
Authors:
Company: Eastman
Poster Title: Eastman Aventa™ Renew Compostable Materials
Abstract:
Regulatory and social pressures are influencing the choices that consumers make regarding food service and food packaging articles; and the brands that use them. While many choices are still available today, Eastman is developing sustainable product solutions for an evolving future where microplastics, PFAS and other "problematic materials" are a thing of the past.

Presenter Name(s): Arun Sridharan
Authors:
Company: ExxonMobil
Poster Title: Controlling metal complex speciation with ligand sterics: Synthesis of monomeric iron(II) and cobalt(II) chloride/methyl complexes using the bulky ligand ITr
Abstract:
Transition metal chloride and methyl complexes are common catalysts for C–C bond-forming reactions. In the absence of sufficiently sterically bulky supporting ligands, these species can form clusters which may exhibit reduced catalytic activity, among other effects. In this work we demonstrate the use of an extremely bulky ligand, *N*,*N*'-bis(triphenylmethyl)imidazol-2-ylidene ("ITr"), in synthesizing rare examples of monomeric, three-coordinate chloride and methyl complexes of iron(II) and cobalt(II). Preliminary reactivity studies demonstrate that these compounds are competent catalysts for mediating C–C bond-forming processes, including ethylene polymerization.

Presenter Name(s): Abby Van Wassen
Authors:
Company: Chemours
Poster Title: A New Low-GWP Dielectric Fluid for Immersion Cooling of Data Centers
Abstract:
Two-phase immersion cooling (2-PIC) is an emerging technology for thermal management of high heat-density server used in data centers. In 2PIC systems, electronic components are in direct contact with a dielectric liquid, which vaporizes while in contact with heat generating components. The vapor subsequently condenses while the heat is removed externally. 2PIC systems offer higher cooling performance that allows for a greater than 50% reduction in footprint relative to air cooled technologies. Using 2-PIC, data centers can significantly reduce energy usage, while consuming little to no water.

Although 2-PIC technology exists today, the dielectric fluids used either have high Global Warming Potential (GWP), poor dielectric properties or chemical compatibility issues.

This poster will introduce participants to a new low-GWP hydrofluoroolefin (HFO) dielectric fluid under development by Chemours. First, the poster will discuss the dielectric properties of this new fluid and their impact on signal integrity. Second, the poster will explore its heat transfer properties and how it will help effectively cool future generations of chips. The poster will also discuss compatibility of the fluid with typical materials and also bring actual performance data of a 2-PIC tank operating with the new HFO dielectric fluid and a server. Finally, the poster will present the results of a case study comparing the energy efficiency and total cost of ownership of different data center cooling technologies.

Presenter Name: Jeffrey Wilbur
Authors:
Company: DuPont
Poster Title: Nanofiltration in Direct Lithium Extraction: Component and System Design Innovation
Abstract:
Sustainability needs and economic growth are driving global electrification efforts and accelerating demand for purified lithium to support battery production. In the next 5 years, the lithium market is expected to grow at a 10% CAGR, exceeding $9B by 2028. Traditional lithium recovery from brines is achieved through expensive, water/chemical/footprint intensive, and slow evaporative processes. These legacy purification processes are being supplanted by novel direct lithium extraction (DLE) designs that are much faster and have smaller footprints in terms of both sustainability and land use.

DLE processes combine a lithium-selective sorbent and membrane separations to purify and concentrate brines to enable final production of battery-grade lithium carbonate or lithium hydroxide. We have found that selective nanofiltration separations can enhance the efficiency of DLE processes by removing multivalent impurities while minimizing lithium losses. We will discuss the impact of feed composition and system design on nanofiltration performance, as well as upgrades we have made to our nanofiltration membranes to address the critical needs of this market.

Presenter Name: Susie Wu, Shyamal Saha, and Jesse Hellums
Authors: Susie Wu, Shyamal Saha, and Jesse Hellums
Company: Trecora
Poster Title: Enabling Sustainable Technology Deployment
Abstract:
Trecora's poster, titled "Enabling Sustainable Technology Deployment," emphasizes our significant role in advancing sustainable technologies through thorough research, pilot testing, and commercial trials. Trecora provides a seamless transition from lab-scale experimentation to large-scale production, facilitating the shift from fossil-based to renewable resources for polymers and specialty chemicals. Our extensive chemical process capabilities include polymerization, esterification, hydrogenation, and more, tailored to various industrial applications.

Based in the Gulf Coast industrial sector of Texas, Trecora operates state-of-the-art facilities in Pasadena and Silsbee, which are well-equipped for diverse chemical handling and benefit from excellent transportation links via rail, truck, and marine with proximity to nearby ports. The poster highlights

notable achievements in sustainable product commercialization and provides examples of additional capabilities. Our commitment to sustainability is further demonstrated by our commercial production of low carbon footprint waxes from pre-consumer recycled materials. Trecora's structured project development process, from conceptualization to commercial production, showcases our ability to support and execute innovative sustainable chemical solutions, with successful long-term customer partnerships underscoring their expertise and reliability in the industry.

Presenter Name: Susie Wu, Shyamal Saha, and Jesse Hellums
Authors: Susie Wu, Shyamal Saha, and Jesse Hellums
Company: Trecora
Poster Title: The Sustainable Wax Revolution
Abstract:

Trecora's poster, titled "The Sustainable Wax Revolution," embodies our steadfast dedication to sustainability and groundbreaking innovation. As a leader in the production of specialty polyethylene and poly alpha olefin waxes, Trecora's Specialty Wax segment serves a wide array of markets, including paints, inks, adhesives, coatings, and PVC lubricants, utilizing our high-quality polyethylene waxes. In addition, our poly alpha olefin waxes are tailored for specialized applications such as toner in printers and enhancing candle fragrances.

At the heart of our mission lies the development of our more sustainable PE wax, marking a revolutionary shift in industry standards. Produced from recycled waste streams through cutting-edge technology, this wax significantly reduces carbon emissions compared to conventional PE waxes, thereby supporting a more environmentally conscious future. Besides its environmental benefits, our PE wax improves product performance, allowing our customers to achieve their sustainability goals without compromising on quality and innovation. Trecora remains at the forefront of redefining performance and sustainability in the wax industry, pioneering advancements that resonate with modern ecological and performance standards.

Presenter Name: Hunter Ye
Authors: Hunter Ye, Ramin Amin-Sanayei, Wenjun Wu
Company: Arkema
Poster Title: High Performance Anode Binder
Abstract:

Binders are inactive but necessary component of the electrodes and without using a proper binder, the performance of LIBs would prematurely degrade. A well-designed binder allows to increase the electrode energy density by reducing the binder demand as well as increasing cycle-life by maintaining an adequate mechanical integrity and ionic mobility within the electrode.

This poster will present a newly designed high-performance anode binder by Arkema. IncellionTM EL 1061 is a high purity waterborne binder, could overcome the limitations of traditional binders, and allows to maximize the performance of conventional anodes –including graphite loading of > 97%, first cycle efficiency of > 93%, high C-rate capability of 2C/0.2C of > 96.5%, and capacity retention of > 92% after 500-cycles in 18650 cells- without a need to change the anode design. Moreover, double-sided anodes of > 35 mg/cm2 loadings were successfully fabricated using this high-performance binder and tested in 75 Ah high energy density pouch cells needed for demanding applications.

Presenter Name(s): Hannah Zeitler
Authors:
Company: DuPont
Poster Title: Kalrez® perfluoroelastomer parts - improving circularity in specialty sealing
Abstract:

Kalrez® perfluoroelastomer parts deliver superior sealing in extreme environments, and the portfolio is specially developed for use under harsh conditions in applications ranging from chip manufacturing and chemical processing to oil and gas, renewable energy, and aerospace. Due to their durability, sealing properties, and reduced energy consumption, Kalrez® parts offer many sustainability benefits vs alternative materials. Additionally, to further improve our sustainability profile, the Kalrez® team is working to recycle properly cured O-rings that did not pass our rigorous screening process due to factors not affecting rubber performance. We aim to increase the circularity of our portfolio by incorporating recovered product, while maintaining the excellent performance of our O-rings at the same time.