REALIZE THE FUTURE

TECHNOLOGY HORIZONS

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IN THIS ISSUE

Horizons is also available on our website at **zeton.com**

UNLEASHING SYNERGIES AND MAPPING THE FUTURE: ZETON'S ICELANDIC ODYSSEY

In a captivating Icelandic setting, the Zeton group of companies, including Zeton Canada, Zeton Netherlands and Chemical Design, Inc. gathered this October to chart a bold course for their sales and marketing departments over the next decade. With their sales teams in tow, a total of 20 attendees united to understand inherent synergies, envision the future, and address potential business risks and opportunities.

The reunion aimed to foster collaboration and unity among the Zeton companies, recognizing that their strength lies in working together. The event became a hub for the exchange of ideas and best practices, transcending individual objectives to unlock collective potential.

A core theme was projecting what the industry will resemble in the coming decade, along with exploring emerging technologies and trends. By understanding changing demographics, technology advancements, shifting government policies and sustainability trends the companies are poised to adapt and innovate, staying ahead of the curve.

Moreover, this remarkable gathering provided a unique opportunity for members of Zeton Canada, Zeton Netherlands and Chemical Design, Inc. to meet their counterparts in person for the first time. Building personal bonds and relationships among team members was an invaluable byproduct of the reunion, further solidifying the spirit of collaboration.

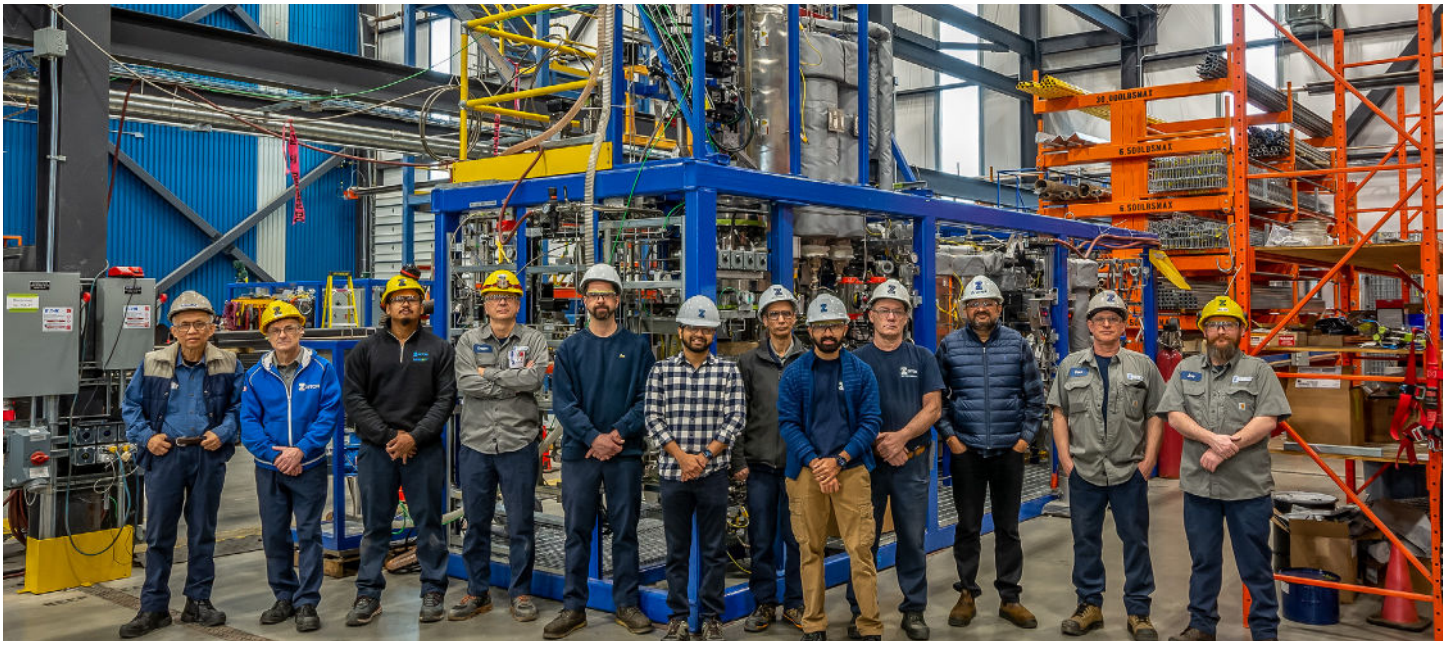
Beyond the boardroom discussions, outdoor activities added a touch of adventure to the event. Against the stunning backdrop of Iceland's natural wonders, attendees forged memories and camaraderie that will undoubtedly strengthen their collaborative efforts in the years to come.

The reunion was a melting pot of ideas and innovation, showcasing the undeniable synergy between the Zeton companies. It culminated in a united front, prepared to redefine the future by embracing collaboration, adaptability, and a vision of the unknown.

The Icelandic natural grandeur set the stage for a brighter, more synergistic future. This reunion wasn't just a meeting; it was a powerful launchpad for the journey ahead.

DISCOVER ANOTHER CAPTIVATING MOMENT ON PAGE 3

CATALYZING THE FUTURE OF SUSTAINABLE FUELS



In the ever-evolving realm of sustainable energy, Shell, a global energy giant, is making significant advances with its Mini Bench-Scale Unit (MBU) project. This project harnesses the revolutionary IH2® technology, originally developed by GTI and subsequently licensed by Shell, to convert non-food biomass feedstocks into cleaner transportation fuels. With a remarkable 60% reduction in greenhouse gas emissions, technology promises to reshape the future of fuel production.

The IH2® technology, a catalytic thermo-chemical process, has the remarkable capability to transform a diverse range of non-food biomass feedstocks, including wood, agricultural residues, algae, municipal waste, and plastic, directly into gasoline, jet fuel, and diesel.

Shell's collaboration with Zeton on this venture marks a significant milestone, as it represents the latest IH2® plant project. Previous plants, boasting capacities ranging from a few grams to tons, were instrumental in laying the groundwork for this new effort. The motivation behind this new MBU project was clear: to shift from campaign processing to continuous operations. This new installation also features high alloy components, an adjustment made to consider the temperatures involved in the process.

One notable addition is the improved filtration system with a standby filter. This innovation significantly extends the plant's runtime, aligning perfectly with sustainability objectives by optimizing long run times.

Like any ambitious project, the journey had its fair share of challenges. The solids feed screw required several design iterations ultimately improving its performance. Safety was a key point for the plant, with rigorous testing done to ensure that no hydrocarbon leakage would occur on-site, emphasizing Shell's and Zeton's commitment to safety and environmental responsibility.

Fitting all the essential components into a compact space was a formidable challenge. The project engineering and fabrication team's expertise was instrumental in optimizing the layout and making efficient use of the available space.

The project's outcomes speak volumes about the collaboration between Shell and Zeton as demonstrated by a highly successful Factory Acceptance Test (FAT). The project not only achieved its technical goals but also strengthened the collaborative relationship between the two organizations.

In May 2023, the innovative MBU unit was shipped from Zeton's facility, marking a significant stride towards a greener, more sustainable energy future.

Zeton Project manager, Pratik Bhishikar: "It has been an incredible journey working closely with Shell on the Mini Bench-Scale Unit project. Our partnership with Shell has been marked by a strong spirit of collaboration, innovation, and a shared commitment to progress. Together, we've overcome challenges and achieved our goals. This project is not only a testament to our technical achievements but also to the strength of our collaboration.

The successful FAT was a significant milestone, reinforcing our confidence in the project's potential. We are excited about the future and the impact the MBU unit will have in shaping a more sustainable energy future. This project has not only strengthened our relationship with Shell but has also opened doors to new possibilities and innovations. We look forward to continued collaboration and the positive changes we can bring to the world of sustainable energy." ■

The Zeton and CDI teams building strong collaborations at the awe-inspiring Kerid Crater in Iceland

TEAM **SPIRIT** HIGHLIGHTING THE ACCOMPLISHMENTS OF OUR STAFF IN THE DUTCH AND CANADIAN OPERATIONS

ZETON'S SLAM DUNK FOR SICKKIDS: PLAYING WITH PURPOSE AND PASSION!

In the excitement of the annual SickKids Heatwave Tournament, Zeton once again showed its unwavering commitment to both team spirit and charity. With enthusiasm and determination, Zeton participated with two teams. One, a recreational team, brought out the fun-loving side in our Zeton family, while the other, a competitive squad, aimed for glory. And glory they achieved – the competitive team clinched the silver medal, a remarkable accomplishment!

However, the true triumph of our participation was in the generosity of our team. Zeton raised an impressive $1500 for SickKids Hospital. This contribution will undoubtedly make a significant difference in the lives of the children and families who rely on the hospital's care.

The SickKids Heatwave Tournament is not about the competition; it's about the bonds formed, the shared laughter, and the knowledge that we're making a meaningful impact. Year after year, Zeton eagerly anticipates this event as it unites us in a common cause while delivering hours of pure fun.

Zeton is proud to be a part of this wonderful tournament, and our anticipation for next year's event is already building. We are dedicated to both supporting our community and having a great time!

IN BRIEF

HIGHLIGHTING RECENT AND COMPLETED PROJECTS AND ENGINEERING STUDIES

- A batch gas fermentation pilot plant
- Conceptual design for a protonic membrane reformer demoplant
- Conceptual design for a polycondensation plant
- Feasibility study for purification upstream stack electrolyzer
- Basic design for an aerobrew pilot plant
- A biomass to liquid fuels demo plant
- Upgrade of the control system for a hydroprocessing pilot plant

A continuous manufacturing plant for the pharma industry

An industry-scale hydrogen deoxidation dryer system

A catalyst testing unit

A large scale, high-pressure water electrolysis plant

CONTACT US

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