



HPQ'S PILOT-SCALE FUMED SILICA PRODUCTION NEARS COMMERCIAL VIABILITY

SEM analysis of Phase 1 Test #5 materials confirms successful scale-up and sets the stage for Phase 2 performance trials in August.

MONTREAL, Canada, July 23rd, 2025 — [HPQ Silicon Inc.](#) (“HPQ” or the “Company”) (TSX-V: [HPQ](#), OTCQB: [HPQFF](#), FRA: [008](#)), a technology company driving innovation in advanced materials and critical process development, is pleased to update shareholders on progress from its proprietary Fumed Silica Reactor (FSR) pilot project, developed in partnership with [PyroGenesis Inc.](#) (TSX: [PYR](#), OTCQX: [PYRGF](#), FRA: [8PY1](#)).

Following its [July 3rd](#) announcement, the Company has now received an independent **Scanning Electron Microscope (SEM)** ^[1] analysis of materials produced during Phase 1 Tests #4 and #5.

SEM RESULTS CONFIRM MAJOR TECHNICAL MILESTONE

PyroGenesis’ evaluation of the SEM report confirms that materials produced during Phase 1 Test #5 of HPQ Silica Polvere Inc.’s (HSPI) ^[2] pilot-scale FSR:

1. **Display morphological characteristics** consistent with commercial-grade fumed silica previously produced at lab scale.
2. **Reflect improvements in particle structure and consistency** following process optimizations implemented after Test #4, and
3. **Indicate that ongoing enhancements** to the reactor process are likely to achieve lab-scale surface area performance at the pilot level.

This latest data builds on the success of previous trials and further validates HPQ’s transition from small-batch lab production to semi-continuous pilot-scale manufacturing.

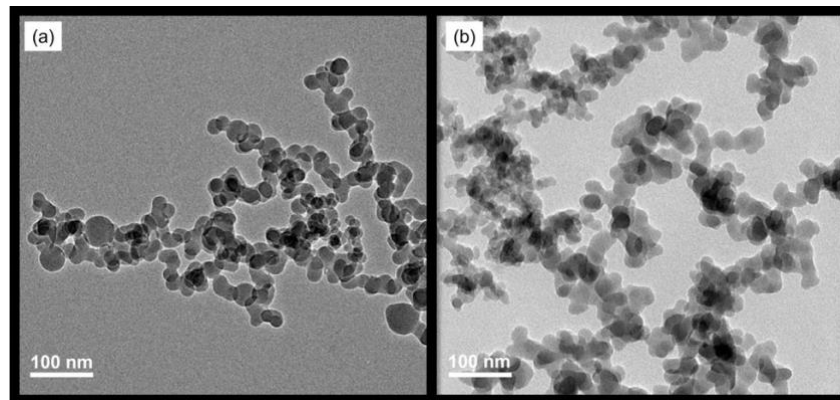


Figure 1. Images of Fumed Silica nanoparticles
(a) from HPQ Silica Polvere lab-scale work in 2023, (b) commercially available material made with traditional process

“These SEM results are a strong technical validation of our Fumed Silica Reactor’s scalability,” said Bernard Tourillon, President and CEO of HPQ Silicon and HPQ Silica Polvere Inc. *“They show we’re not only reproducing the lab-scale properties at a larger scale, but we’re doing so with improved process control and material quality. This sets the stage for Phase 2, where we aim to match—and eventually surpass—the performance of conventional commercial fumed silica, while doing it more cleanly, efficiently, and with fewer emissions.”*

WHAT'S NEXT: PHASE 2 AND COMMERCIAL TARGETING

Phase 2 testing is scheduled to begin in early August 2025 and will focus on replicating and validating the surface area metrics achieved at lab scale. This is a critical step in preparing for sample qualification with commercial partners and in supporting ongoing discussions with off-takers.

The FSR project aims to develop a new generation of low-carbon, plasma-based fumed silica production. Traditional methods rely on high-temperature flame hydrolysis of silicon tetrachloride (SiCl_4), a process that generates significant CO_2 and chlorine byproducts. In contrast, HPQ's plasma-based approach utilizes quartz as a feedstock, thereby eliminating toxic reagents and significantly reducing environmental impact.

With global demand for fumed silica projected to reach US\$ 3.54 billion by 2029, growing at a CAGR of 7.46% ^[3], HPQ's innovative process is poised to provide a cleaner, cost-effective, and scalable alternative for industries such as batteries, sealants, construction materials, and personal care.

REFERENCE SOURCES

- [1] Scanning Electron Microscope (SEM) analysis done by leading global fumed silica manufacturer ("LGFSM").
- [2] A wholly owned subsidiary of HPQ Silicon Inc., when technology supplier PyroGenesis announced its intention to exercise its option to acquire a 50% stake in HSPI in May 2024.
- [3] EXACTITUDE CONSULTANCY: [Fumed Silica Market by Type \(Hydrophobic, Hydrophilic\), by Application \(Paints and Coatings, Adhesives and Sealants, Pharmaceuticals, Personal Care, Food and Beverages, Gel batteries, Lighting\) and Region, Global trends and forecast from 2023 to 2029.](#)

About HPQ Silicon

[HPQ Silicon Inc.](#) ([TSX-V: HPQ](#)) is a Quebec-based TSX Venture Exchange Industrial Issuer.

HPQ is a technology company focused on innovation in advanced materials and critical process development. In partnership with world-class technology leaders [PyroGenesis Inc.](#) and [NOVACIUM SAS](#)—of which HPQ is a shareholder—the company is developing the materials and process technologies essential to achieving net-zero goals.

HPQ activities are centred around the following pillars:

- 1) Becoming a green, low-cost (Capex and Opex) manufacturer of Fumed Silica using the **FUMED SILICA REACTOR**, a proprietary technology owned by HPQ Silica Polvere Inc., being developed for HSPI by PyroGenesis.
- 2) Working with R&D partner NOVACIUM SAS, to become a producer of silicon-based anode materials for battery applications.



- 3) Developing Innovative processes to generate and use Hydrogen:
 - a. **METAGENE™**, a low-carbon, chemical-based, on-demand, high-pressure autonomous hydrogen production system, is being developed by NOVACIUM SAS of which HPQ holds the exclusive North American (Canada, USA, and Mexico) license.
 - b. **WASTE TO ENERGY (W2E)**, a new process to transform black aluminum dross into a valuable resource, is being developed by NOVACIUM SAS, of which HPQ holds the exclusive North American (Canada, USA, and Mexico) license. HPQ is also a shareholder in NOVACIUM SAS.
- 4) Becoming a zero-CO₂ low-cost (Capex and Opex) producer of High Purity Silicon (2N+ to 4N) using our **PUREVAP™ “Quartz Reduction Reactors” (QRR)**, a proprietary technology owned by HPQ being developed for HPQ by PyroGenesis.

For more information, please visit HPQ Silicon web site.

About PyroGenesis Inc.

PyroGenesis, a high-tech company, is a proud leader in the design, development, manufacture and commercialization of advanced plasma processes and sustainable solutions which reduce greenhouse gases (GHG) and are economically attractive alternatives to conventional “dirty” processes. PyroGenesis has created proprietary, patented and advanced plasma technologies that are being vetted and adopted by multiple multibillion dollar industry leaders in four massive markets: iron ore pelletization, aluminum, waste management, and additive manufacturing. With a team of experienced engineers, scientists and technicians working out of its Montreal office, and its 3,800 m² and 2,940 m² manufacturing facilities, PyroGenesis maintains its competitive advantage by remaining at the forefront of technology development and commercialization. The operations are ISO 9001:2015 and AS9100D certified, having been ISO certified since 1997. PyroGenesis’ shares are publicly traded on the TSX in Canada (TSX: PYR), the OTCQX in the US (OTCQX: PYRGF), and the Frankfurt Stock Exchange in Germany (FRA: 8PY). www.pyrogenesis.com

Cautionary Note Regarding Forward-Looking Information

This press release contains “forward-looking information” and “forward-looking statements” within the meaning of applicable securities legislation (collectively, “forward-looking statements”), including, but not limited to, statements relating to future financial or operating events or future performance of the Company, and reflecting management’s expectations and assumptions regarding the Company’s growth, results, performance, and business prospects and opportunities. Such forward-looking statements reflect management’s current beliefs and are based on information currently available to it. In some cases, forward-looking statements can be identified by words such as “aim”, “anticipate”, “aspire”, “attempt”, “believe”, “budget”, “could”, “estimate”, “expect”, “forecast”, “intend”, “may”, “mission”, “plan”, “potential”, “predict”, “progress”, “outlook”, “schedule”, “should”, “study”, “target”, “will”, “would” or the negative of these terms or other similar expressions concerning matters that are not historical facts.

In particular, forward-looking statements include, but are not limited to, the Company’s ability to develop its low-cost (Capex and Opex) manufacturing of Fumed Silica using its Fumed Silica Reactor (FSR) and enter in commercial production within the timeline, to provide high-performing and reliable advanced materials while promoting sustainability and supply chain traceability, and to position its fumed silica operation in the capital markets, the expected results of the initiatives described in this press release, and those statements which are discussed under



the “About HPQ Silicon” paragraph and elsewhere in the press release which essentially describe the Company’s outlook and objectives.

Additionally, the forward-looking statements include, but are not limited to, the Company’s future results, the intended pilot plant testing and timeline of the Fumed Silica Reactor commercial scale up, the economic performance and product development efforts, as well as the Company’s expected achievement of milestones, including the ability to conclude an offtake agreement and obtain sufficient financing for the future development on favorable terms for the Company.

Further, these forward-looking statements include the Company’s ability to achieve its Fumed Silica strategy and its intended results, market trends, the consumer demand for materials, the Company’s competitive advantages, macroeconomic conditions, the impact of applicable laws and regulations, and any information as to future plans and outlook for the Company are or involve forward-looking statements.

Forward-looking statements are based on estimates and assumptions that, while considered reasonable by the Company at the time of such statements, are inherently subject to significant business, economic, and competitive uncertainties and contingencies. These estimates and assumptions are not guarantees of future performance and may prove incorrect. These statements rely on various factors, including current technological trends, safe and effective operations, timely delivery and installation of future production equipment at estimated prices, assumed Fumed Silica sale prices, future exchange and interest rates, political and regulatory stability, commodity prices and production costs, the receipt of necessary approvals, licenses, and permits on favorable terms, sustained labor stability, financial and capital market conditions, availability of critical supplies and equipment, tax assumptions, CAPEX and OPEX estimates, economic and operational projections, local infrastructure, and overall business prospects. Forward-looking statements are also subject to risks, uncertainties, and other factors that may cause actual results to differ materially, including the outcome of development, engineering, and planning activities, market conditions, competition, pricing pressures, risks inherent to mining exploration and development, the commercial viability of the Company’s technology, project timelines, business continuity challenges, geopolitical instability, and other industry risks. Additionally, there can be no assurance that the conditions precedent of offtake agreements, product qualification requirements, and commercial operations will be met, nor that the Company will fulfill the expectations of financing partners and certifying bodies.

Forward-looking statements are subject to known or unknown risks and uncertainties that may cause actual results to differ materially from those anticipated or implied in the forward-looking statements. Risk factors that could cause actual results or events to differ materially from current expectations include, among others, delays in the scheduled delivery times of the equipment, the ability of the Company to successfully implement its strategic initiatives and whether such strategic initiatives will yield the expected benefits, the availability of financing or financing on favorable terms for the Company, the dependence on commodity prices, the impact of inflation on costs, the risks of obtaining the necessary permits, the operating performance of the Company’s assets and businesses, competitive factors in the graphite mining and production industry, changes in laws and regulations affecting the Company’s businesses, political and social acceptability risk, environmental regulation risk, currency and exchange rate risk, technological developments, as well as earnings, capital expenditure, cash flow and capital structure risks and general business risks. A further description of risks and uncertainties can be found in HPQ’s Annual Information Form dated March 21, 2025, including in the section thereof captioned “Risk Factors”, which is available on SEDAR+ at www.sedarplus.ca. Unpredictable or unknown factors not discussed in this Cautionary Note could also have material adverse effects on forward-looking statements.

Although the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking statements, there may be other factors that may cause results not to be as anticipated, estimated or intended. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Forward-looking statements are provided for the purpose of providing information about management’s expectations and plans relating to the future. The Company disclaims any intention or obligation to update or revise any forward-looking statements or to explain any material difference between subsequent actual events and such forward-looking statements, except to the extent required by applicable law.

Market and industry data presented throughout this press release was obtained from third-party sources and industry reports, publications, websites and other publicly available information, as well as industry and other data prepared by the Company or on the behalf of the Company based on the Company’s knowledge of the markets in



which the Company operates, including information provided by suppliers, partners, customers and other industry participants.

The Company believes that the market and economic data presented throughout this press release is accurate as of the date of publication and, with respect to data prepared by the Company or on behalf of the Company, that estimates and assumptions are currently appropriate and reasonable, but there can be no assurance as to the accuracy or completeness thereof. The accuracy and completeness of the market and economic data presented throughout this press release are not guaranteed and the Company does not make any representation as to the accuracy of such data.

Actual outcomes may vary materially from those forecast in such reports or publications, and the prospect for material variation can be expected to increase as the length of the forecast period increases. Although the Company believes it to be reliable as of the date of publication, the Company has not independently verified any of the data from third-party sources referred to in this press release, analyzed or verified the underlying studies or surveys relied upon or referred to by such sources, or ascertained the underlying market, economic and other assumptions relied upon by such sources. Market and economic data are subject to variations and cannot be verified due to limits on the availability and reliability of data inputs, the voluntary nature of the data gathering process and other limitations and uncertainties inherent in any statistical survey.

Further information regarding the Company is available in the SEDAR+ database (www.sedarplus.ca), and on the Company's website at: www.hpqsilicon.com

Neither the TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.

This News Release is available on the company's [CEO Verified Discussion Forum](#), a moderated social media platform that enables civilized discussion and Q&A between Management and Shareholders.

Source: HPQ Silicon Inc.

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