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**Gelion plc**  
("Gelion", the "Company" or the "Group")

### **Strategic Partnership with Max Planck Institute**

*Gelion to leverage MPI's breakthrough in Next-Generation Sulfur Batteries*

Gelion plc (AIM: GELN), the global energy storage innovator, is pleased to announce a strategic cooperation agreement with the Max Planck Institute (MPI), Potsdam, to develop high-power, high-cycle life sulfur batteries with high energy densities.

#### **Highlights**

- The partnership brings together Gelion's advanced battery technology designs with MPI's breakthrough nano-confined carbon/sulfur composite cathode<sup>[#]</sup> and anode material technologies;
- The novel sulfur composite technology has been successfully tested by MPI in sodium-sulfur (Na-S) cells, demonstrating both long cycle life (many hundreds of cycles) and high-power capabilities (10C), highlighting its potential for use in long duration stationary storage as well as EVs, leveraging off its low-cost materials and its fast-charging characteristics (below 10 minutes);
- Initial testing relevant to Gelion's lithium-sulfur (Li-S) technology (energy density of +400 Wh/kg) has also shown great promise and the technology is expected to make a substantive positive contribution to cycle life and power characteristics;
- The agreement enables Gelion to integrate the technologies, designs and expertise of both parties to fully demonstrate MPI's nano-confined materials - initially in coin and then in larger, commercially relevant pouch cell formats - for both Na-S and Li-S batteries;
- Under the agreement, both parties will formally combine their intellectual property (IP), with Gelion granted an exclusive option to acquire exclusive commercial rights to any jointly developed IP and relevant background IP;
- The board of Gelion believes that this collaboration aligns seamlessly with Gelion's sulfur battery strategy and significantly accelerates its pathway to commercialisation.

MPI's data has demonstrated charge and discharge rates down to below 10 minutes, with Na-S batteries at lifetimes well in excess of many hundreds of cycles and at capacities that suggest achievable energy densities of the best current Lithium Iron Phosphate (LFP) batteries. The first phase of testing has already commenced at Gelion's facilities, with promising early results that validate the main elements of MPI's testing and signal a bright future for this pioneering technology.

The agreement will enable Gelion to integrate both technologies and fully demonstrate MPI's cathode composite initially in coin and then in larger, commercially relevant pouch cell formats, both for Na-S and Li-S batteries. This collaboration aligns seamlessly with Gelion's sulfur battery strategy and significantly accelerates its pathway to commercialisation.

#### **A New Era for Sulfur Batteries**

The Board of Gelion believes that the MPI technology represents a major leap forward for sulfur-based energy storage. It combines power, energy density, and long cycle life, three essential characteristics previously difficult to achieve in a single cell. Notably, it addresses key challenges in sulfur battery development by providing a path towards rapid charge and discharge rates with outstanding stability, while utilising low-cost, abundant materials like carbon, sodium, and sulfur.

#### **Partnership for Progress**

The collaboration will also focus on scaling anode technologies that improve safety and durability, addressing industry concerns around metal dendrites. By integrating MPI's novel nano-confined anode materials with Gelion's innovative battery designs, the partnership aims to create commercially viable, high-performance energy storage solutions.

#### **Summary of Agreement between Gelion and Max Planck Institute**

Under the agreement between Gelion and the Max Planck Institute, both parties will combine their intellectual property to develop new technologies, with Gelion granted an exclusive option to acquire exclusive commercial rights to any jointly developed IP and relevant background IP. This option can be exercised during the three-year collaboration period or within six months after its conclusion, with any rights acquired being subject to a licensing agreement on reasonable commercial terms. Throughout the partnership, MPI will dedicate two researchers to the project, with Gelion covering their costs, focusing on core technology development and testing while also contributing to commercialisation.

**Gelion CEO, John Wood, commented:** *"This collaboration harnesses a unique hybrid approach that synergistically enables both conversion and intercalation on each electrode. Sulfur has always been about high energy density but struggled with power and cycle life. By merging Gelion's and MPI's approaches we are now demonstrating the potential to provide all three characteristics in one cell.*

*This goes beyond being simply a 'better battery', because it conceptually re-defines some of the very essence inside the cell.*

*Gelion and MPI have set a collaboration plan utilising the best capabilities of each team to build on the positive test results already achieved and to deliver sulfur cell technology that does not compromise and delivers high performance in energy, power, and cycle life."*

**Prof. Dr. Markus Antonietti, Director at MPI, added:** *"We are excited to partner with Gelion to commercialise our groundbreaking sulfur battery technology. Together, we aim to deliver affordable, sustainable, and high-performance energy solutions to meet global demands."*

**Prof. Thomas Maschmeyer, Gelion Founder and Director, said:** *"Having known Prof. Antonietti and admired his work for more than two decades, it is wonderful that we are now able to join both efforts, to generate a world-leading technology package. The combined capabilities of Gelion and the MPI are exceptional and can deliver cheap and safe energy storage with highly attractive performance characteristics based on some of the most abundant and well-distributed elements imaginable - carbon, sodium and sulfur."*

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**About Gelion**

Gelion ("gel: ion") is a global energy storage innovator, supporting the transition to a more sustainable economy by commercialising globally important next generation battery technologies: Sulfur based, Lithium-Sulfur (LiS), Sodium-Sulfur (NaS) and Zinc-based (Zn) hybrid cells to electrify mobile and stationary applications. Gelion plc (the Group) is listed on the London Stock Exchange's Alternative Investment Market and wholly owns UK based OXLiD Ltd and Battery Minerals Ltd and Australia based Gelion Technologies Pty Ltd. Gelion is designing and delivering innovative battery technology to enable that transition and return value for its customers and investors.

**About the Max Planck Institute (MPI)**

The Max Planck Society (MPG), formerly the Kaiser Wilhelm Society, is the pre-eminent and largest German, non-profit research organization with near unmatched global prestige, conducting basic research in natural, life, and human sciences through its 84 institutes and facilities, which all have specific missions.

The Max Planck Institute (MPI) for Colloid and Interface Science is one of the world's leading deep technology research centres in that area and known for exceptional breakthroughs in materials science, e.g. highly conductive and stable carbon/nitrogen composites that are more 'noble' than gold.

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