

Moses Lake Industries Advances Copper Recycling Initiative for Semiconductor Manufacturing

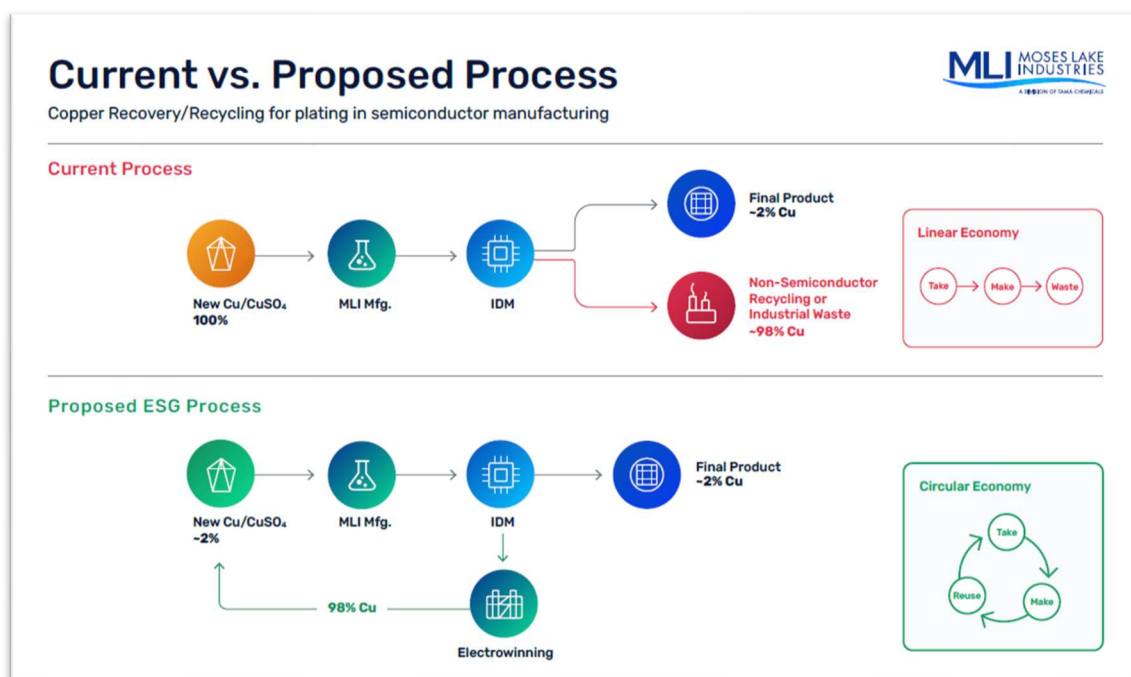
Moses Lake Industries (MLI) has successfully demonstrated a new proof-of-concept process that advances the recovery and purification of copper for advanced semiconductor manufacturing, marking an important step toward more sustainable and resilient material supply chains.

The Challenge

Copper is a critical material in semiconductor manufacturing, used extensively as interconnects in damascene and advanced packaging applications. The worldwide growth of semiconductor production, fueled by the increasing prevalence of AI technologies, makes the efficient management of copper increasingly important.

Semiconductor manufacturing processes require constant replenishment of electroplating baths to maintain optimal performance, with approximately 98% of the copper input exiting as a spent stream. While some Integrated Device Manufacturers (IDMs) recover this copper through electrowinning and other processes, the recovered material rarely meets the purity requirements for advanced semiconductor applications. As a result, it is typically diverted to lower-value uses, representing a significant loss of critical and increasingly valuable material.

This gap between recovery and reuse highlights an important opportunity for innovation.



MLI's Approach

With over 40 years of experience developing ultra-high-purity chemistry for semiconductor manufacturing, MLI is applying its expertise in precision chemistry and advanced purification processes to develop new solutions for material recovery and reuse.

The recent proof-of-concept demonstrated the technical feasibility of recovering copper from IDM processes and refining it to meet the purity standards required for advanced semiconductor manufacturing, creating the potential to turn a waste stream into a valuable manufacturing resource. MLI will continue to optimize the process as development progresses. Successful commercial implementation represents an important step toward a renewable copper economy in the semiconductor industry.

“This initiative reflects how we continue applying scientific rigor and innovation to solve complex material challenges within semiconductor manufacturing,” said Hiro Era, CEO of MLI. “By creating new pathways for material recovery and reuse, we are supporting more sustainable, long-term progress for both our customers and the industry.”

How the Initiative Is Taking Shape

The initiative brings together cross-functional teams across research, engineering, operations, and environmental safety as MLI develops scalable solutions that can support both internal manufacturing processes and future customer-facing applications.

As development continues, MLI is evaluating how recycled copper can be reintroduced into internal manufacturing operations and identifying opportunities to extend the model to IDM partners, creating new pathways for recovered materials to re-enter semiconductor manufacturing. IDM partners include both those with existing copper recovery systems and those without.

Why It Matters

For an industry that depends on a stable supply of high-purity materials, developing closed-loop models for critical inputs like copper helps address both practical and strategic priorities. Enabling recovered copper to re-enter high-value semiconductor manufacturing applications improves supply stability, reduces material waste, and supports the consistent purity standards required for advanced device performance. This circular approach will play an increasingly important role, balancing performance, supply security, and environmental responsibility as the industry continues to grow.

Looking Ahead

MLI's successful proof-of-concept is a meaningful, early milestone reached in partnership with IDMs. As MLI continues to refine the purification methods and evaluate opportunities to scale, this collaborative effort points to a broader possibility: that recovered copper can become a reliable input for advanced semiconductor manufacturing rather than a byproduct diverted elsewhere.

For MLI and our partners, the next step is transforming proof-of-concept into a scalable solution that supports the future of semiconductor manufacturing.

For more information about Moses Lake Industries and this initiative, please contact:

PR contact: Kyoko Humphrey

Email: khumphrey@mlindustries.com

You may also find us at:

Website: www.mlindustries.com

LinkedIn: <https://www.linkedin.com/company/moses-lake-industries/>

About Moses Lake Industries, Inc.

MLI is a long-standing leader in ultra-high-purity chemistry for the semiconductor industry.

Established in 1984 in Moses Lake, Washington, MLI has solved complex purity challenges that directly impact device performance and manufacturing reliability.

Today, as a wholly owned subsidiary of Tama Chemicals, MLI operates as part of a global network and partners closely with leading semiconductor manufacturers worldwide to develop and deliver ultra-high-purity chemical solutions across the full technology lifecycle, from research and development through advanced manufacturing environments. Our work is defined by scientific rigor, quality discipline, and a collaborative approach built on long-term trust.