



FOR IMMEDIATE RELEASE

SEMICONDUCTOR INDUSTRY LUMINARY BALA THUMMA JOINS D2S AS VICE PRESIDENT

Bala Thumma will be responsible for D2S' GPU-accelerated pixel-level dose correction (PLDC) technology, which enhances pattern fidelity and accuracy for writing all masks including curvilinear

SAN JOSE, Calif., September 10, 2024—D2S, a supplier of GPU-accelerated solutions for semiconductor manufacturing, today announced that Bala Thumma, a semiconductor industry luminary and former senior executive at Synopsys, has joined the company as vice president of pixel-level dose correction (PLDC). With more than 25 years of software, semiconductor manufacturing and electronic design automation (EDA) experience, Bala will drive development and customer relations for D2S' PLDC solution.

PLDC in mask making is a technology applied in multi-beam mask writers that enhances pattern fidelity and accuracy by manipulating individual pixel doses, rather than adjusting geometries. This correction method improves edge contrast and profile, addressing issues like line-end shortening and CD errors without the need for converting data back into edge-based contour geometries. PLDC operates on GPUs, allowing for fast processing, making it highly efficient for correcting any pattern including the conventional Manhattan patterns, but equally well without an increase in runtime for curvilinear patterns.

According to Aki Fujimura, CEO of D2S, "I've had the pleasure of working with Bala over the years in the photomask community. He and I share a similar background of having first come from EDA place and route software, then moving into software for semiconductor manufacturing. Understanding our customers' customers' technologies and needs helps us to serve our manufacturing customers better. I look forward to his contributions, not only to enhance our capability to deliver innovative solutions, but also to help accelerate the appreciation for mask making throughout the whole semiconductor industry."

"I am excited to join D2S and be part of a team that is at the forefront of innovation in building tools for the most advanced nodes in semiconductor manufacturing," stated Bala Thumma. "The PLDC technology represents a significant advancement in mask making, leveraging GPU acceleration to enhance pattern fidelity and accuracy. I have known Aki Fujimura over the years as an industry luminary in semiconductor manufacturing, and I look forward to working with Aki and the talented team at D2S to drive this technology forward, ensuring our customers meet the ever-increasing demands of advanced semiconductor designs with greater precision and efficiency."



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Bala has been a fixture in the photomask community, serving on the BACUS steering committee for more than a decade, as well as serving in the curvilinear format steering group. Prior to D2S, Bala spent 20 years at Synopsys, where among other roles he was senior director for the Silicon Engineering Group and oversaw the development of Synopsys' Computer Aided Transcription System (CATS) software product, the market leader in mask data preparation. Earlier in his career, Bala was at Intel, leading design, development, and a successful deployment of an in-house place and route tool. Prior to that, he worked on place and route at Compass Design Automation, a subsidiary of VLSI Technologies.

Bala earned a bachelor's degree in electronics and communications engineering from the National Institute of Technology Warangal, a master's degree in computer science from Southern Illinois University Edwardsville, and an MBA from Arizona State University's W. P. Carey School of Business. He holds numerous patents on timing-driven engineering change order in IC designs.

About D2S

D2S is a supplier of GPU-accelerated solutions for semiconductor manufacturing. The company provides simulation-based custom solutions to leading equipment partners and D2S TrueMask® solutions to photomask and wafer manufacturers. D2S TrueMask solutions use the D2S Computational Design Platform to enable advanced photomask designs using complex rectilinear and curvilinear shapes for superior wafer quality within practical, cost-effective write-times. D2S is the managing sponsor of the eBeam Initiative and a founding member of the Center for Deep Learning in Electronics Manufacturing (CDLe). Headquartered in San Jose, Calif., the company was founded in 2007. For more information, see: www.design2silicon.com.

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