

# Foreword

We are pleased to announce the publication of the 2024 Microsystems Annual Research Report, a collaborative effort between the Microsystems Technology Laboratories (MTL) and MIT.nano, covering the academic year from July 1, 2023, to June 30, 2024.

This report highlights the significant achievements of the MIT microsystems community over the past year. In this time, MIT.nano celebrated its 5th anniversary at the Nano Summit on October 24, 2023. Looking ahead, MTL will commemorate the 40th anniversary of its founding on November 20, 2024. As we mark these important milestones, we take pride in showcasing the various ways we continue to drive innovation and advance research in semiconductor materials, technologies, devices, circuits, and systems, as well as exploring new frontiers in nanoscience and nanoengineering. We find ourselves at a pivotal moment in the field of microelectronics, where we are all called upon to push the boundaries of what is possible. MTL, in close partnership with MIT.nano and its state-of-the-art fabrication and characterization facilities, is well-prepared to meet these challenges.

For four decades, MTL has exemplified interdisciplinary and collaborative research, education, and industrial engagement at MIT. This year's report provides a comprehensive overview of over 150 research projects across diverse areas of micro- and nanotechnology. These projects range from advancements in semiconductor materials, the development of new devices, and integrated photonics and circuits, to innovations in insect-scale microrobotics, biomedical systems, and AI hardware accelerators, among many others.

On behalf of MTL and MIT.nano, we extend our deepest gratitude to every contributor to this year's Microsystems Annual Research Report and to the dedicated staff of both organizations, whose tireless efforts have brought this dynamic snapshot of our research to life.

Tomás Palacios  
Director, Microsystems Technology Laboratories

Vladimir Bulović  
Director, MIT.nano

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