

2023-2024 CNF Research Accomplishments

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PHOTOGRAPHY CREDITS

This year’s front cover image is from the report “Weak Link Superconducting Quantum Interference Devices for High-Resolution Scanning Magnetometry”; CNF Project Number: 3017-22, Principal Investigator: Katja Nowack; User: Alex Striff; Affiliation: Laboratory of Atomic and Solid State Physics, Cornell University – and was used with their permission. The full report starts on page 124.

The back cover image is from the report “Micro-Additive Manufacturing Processes for Electrochemical CO2 Reduction”; Summer Program: 2024 Cornell NanoScale Science & Technology Facility Research Experience for Undergraduates Program with Morgan State University, Principal Investigator: Sadaf Sobhani; CNF Summer Student: Hunter Saylor; Student Affiliation: Electrical and Computer Engineering, Morgan State University. The full report starts on page 104.

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2023-2024 CNF Research Accomplishments

DIRECTORS' INTRODUCTION

The Cornell NanoScale Science and Technology Facility (CNF) takes pride in presenting this annual compilation of technical reports from our research groups who make good use of the extensive array of resources provided by the CNF. See the latest issue of our newsletter, the NanoMeter, to learn more about our new and existing programs and opportunities, latest tool acquisitions, updated capabilities and EWD (Education Workforce Development) initiatives (<https://www.cnf.cornell.edu/publications/nanometer>).

The 2023-2024 CNF Research Accomplishments showcases excellence in research while underscoring the diverse array of cutting-edge advancements spanning various fields of science and technology.

This book includes 75 technical reports from our active users and principal investigators and twelve final reports from our 2024 summer program undergraduate students. Almost every section begins with one of our CNF Research Experiences for Undergraduates (CNF REU) Program reports.

To wrap up, the 2023 CNF-related patents, presentations, and publications referred to as “the PPPs”- are listed. These 200 + items highlight the remarkable advancements achieved at the CNF.

We appreciate all the contributors who provided input to this publication, which can also be found online at https://www.cnf.cornell.edu/publications/research_accomplishments .

As always, we welcome your comments, concerns, and questions. Simply email us at information@cnf.cornell.edu

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