

ABOUT US » » »

The Center on Materials and Devices for Information Technology Research (CMDITR) is one of thirteen Science and Technology Centers (STCs) sponsored by the National Science Foundation to enhance the nation's economic competitiveness through interdisciplinary research, technology transfer, and educational innovation.



Over 300 participating CMDITR students, faculty, postdocs, and staff from eight partner universities have the opportunity to work together as well as with leading scientists in industry and government. Funding from NSF, cost sharing, and a vibrant Industrial Affiliates Program totals over \$6M per year. Begun in 2002, the CMDITR will work through 2012 to create scientific legacies in technical discovery and commercialization, K-12 through graduate education, and enhanced workforce diversity.

LOCATIONS

University of Washington
Georgia Institute of Technology
University of Arizona
University of Maryland,
Baltimore County
Cornell University
Norfolk State University
California Institute of Technology
University of Central Florida

DEPARTMENTS

Chemistry
Materials Science & Engineering
Electrical Engineering
Physics
Optical Sciences
Mechanical Engineering
Applied Physics Laboratory

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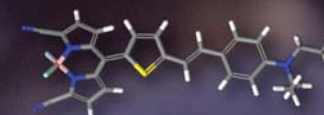
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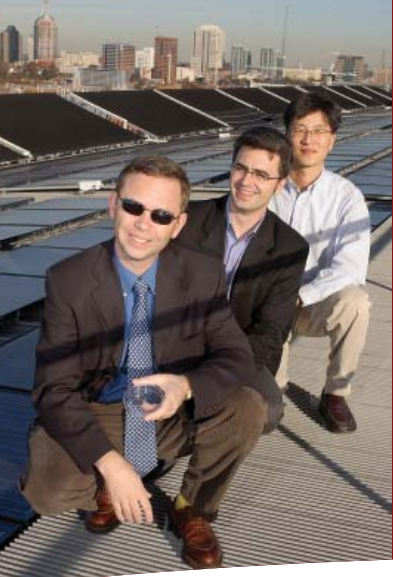


Center on Materials and Devices for Information Technology Research

A National Science Foundation
Science and Technology Center

www.stc-mditr.org





TECHNICAL RATIONALE » » »

The explosion in information technology over the last several decades has been based largely on specialized inorganic materials (for example, silicon, GaAs and LiNbO_3). As our world becomes increasingly connected, efficient transmission of information will require cheaper and faster technologies. The CMDITR is leading the way by producing novel organic materials and device prototypes to move, capture, and modulate electrons and photons. The Center's research is divided into two thrusts: (1) Organic Electro-Optic and All-Optical Materials and Devices and (2) Light Sources and Organic Electronics. Find more details at:

www.stc-mditr.org

RESEARCH APPLICATIONS » » »

Center research will provide the technological foundation for a thousand-fold increase in throughput for telecommunications and information systems. Ultimately, it will lay the foundation for radically new approaches to the design of computers and sensors by migrating to all-optical technologies. Next-generation radar and navigation systems will enhance our nation's defense capabilities, transform transportation, and facilitate space exploration. The energy sector will benefit from a more stable grid and the commercial deployment of practical, inexpensive, and lightweight photovoltaics. With the development of plastic chips and lightweight flexible displays, ubiquitous computing will become achievable, touching virtually every aspect of life, from consumer products and manufacturing to medicine and environmental protection.



EDUCATION PROGRAM » » »

While all Science and Technology Centers are conceived around compelling research, CMDITR also invests heavily in education. A primary goal is to pioneer new courses and curricular tools in the areas of linear and nonlinear optical and organic electronic materials. Diversity is a core value and this theme is amply reflected in CMDITR's membership, programs, and external partnerships. As a result, Center graduates, undergraduates, and postdocs may participate in many unique opportunities to teach, learn, and mentor. Programs include:

- » Domestic and International Research Exchange
- » Industrial Internship Program
- » Graduate and Postdoctoral Mentoring Program
- » Research Experiences for Undergraduates Summer Program
- » Responsible Conduct of Research training
- » Leadership lunch series
- » Online education modules for grades K-12
- » Partnership with the National Consortium for Graduate Degrees for Minorities in Engineering and Science
- » Professional Development Program



INDUSTRIAL AFFILIATES » » »

The CMDITR welcomes active participation by companies wishing to collaborate on research, sponsor student interns, brainstorm, or simply understand the IT landscape from a materials and device point of view. To this end, we have formalized an Industrial Affiliates Program (IAP) wherein companies may sponsor gifts, research grants, or in-kind contributions and benefit from a dedicated website, access to faculty and graduating students, and an annual IAP Exposition.

SPONSORS

- Boeing
- Intel Corporation
- Intex Corporation
- Lintec Corporation
- Lockheed Martin Corporation
- Lumera Corporation
- LumoFlex LLC,
- Nitto Denko Technical
- NP Photonics, Inc.
- Solvay SA