

Working with Industry and Government Partners to Provide State-of-the-Art Solutions...



Department of Energy—Time Resolved Studies of Surface Reactions, Pulsed Laser Deposition



National Science Foundation—Time Resolved Electron Diffraction, Scanning Tunneling Microscopy Studies, Nanocrystals



Invista—Fs Laser micromachining



Eastman Kodak—Electro-optic devices



Framatome ANP—Laser shock processing



Jefferson Lab—Nanostructures/field emission, Photocathodes



Luna Innovations—C60



Philip Morris—Nanocatalysts



Varian Vacuum—Field emission



Vistakon—AFM studies



Xerox—UHV



BP Solar—Solar cells



AFOSR—Plasma, Scanning Electron Microscopy Studies



Army—VUV lithography



CIT—Plasma processing



DARPA—VUV lithography



NASA-Langley—Composites, Photoacoustics, Quantum Dot Detectors, LIDAR



Navy—Ti Tubing Damage Limits



National Institute of Aerospace—IR Detectors

Applied Research Center
Old Dominion University

CONTACTS

Director
Dr. Hani E. Elsayed-Ali

Telephone: (757) 269-5643
Email: helsayed@odu.edu

Applied Research Center
of Old Dominion University
12050 Jefferson Avenue
Suite 721
Newport News, VA 23606

Website:
www.eng.odu.edu/arc



APPLIED

RESEARCH

CENTER

of

Old Dominion University



Applied Research Center
of Old Dominion University
12050 Jefferson Avenue
Newport News, Virginia 23606

Telephone: (757) 269-5643

Laser and Plasma Applications

Basic Sciences: Self-assembled Quantum Dots, Phase Transitions, Interferometry, Atomic Cooling, Spectroscopy, Friction Reduction, Nanostructures, Functionalization

Environmental: Paint Removal, Waste Treatment, Sensors

Industrial: Micro-Welding, Precision Cutting, Micro-Welding, Drilling, Hardening, Marking, Engraving, Melting, Alloying, Cladding, Rapid Prototyping, Shock Processing, Texturing, Forming, Annealing, Sintering, Adhesion, Stress Measurements, Enhanced Wettability, Nonwetting Surfaces

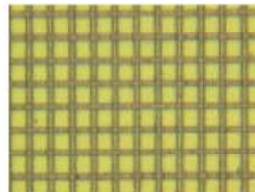
Instrumentation: Movement, Range Finder, Holography, Surveying, Photoacoustics

Semiconductor: Lithography, Thin Films, Crystallization, Surface Cleaning, Annealing, Doping, Printer and Bar Code Scanners, Sensors, Printed Circuit Boards, Photovoltaics, Adhesion, Micromachining, Enhanced Wettability, Nonwetting Surfaces

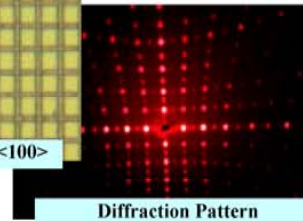
Telecommunications: Optical Storage, Laser Communications, Electro-Optic Devices

Recent Research Conducted by Applied Research Center Scientists and Engineers

Fs Laser Micromachining

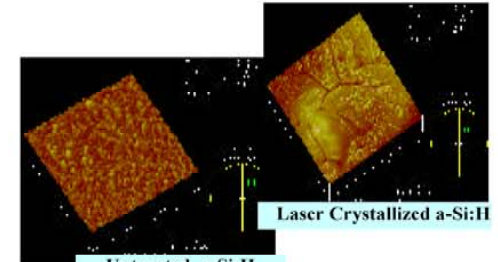


5 nm 2 D Grating on Si<100>



Diffraction Pattern

Solar Cell Processing



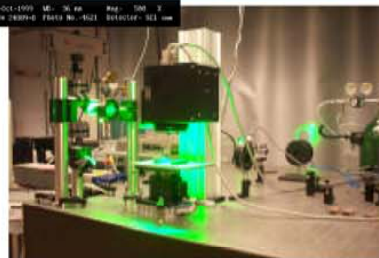
Untreated a-Si:H

Laser Crystallized a-Si:H

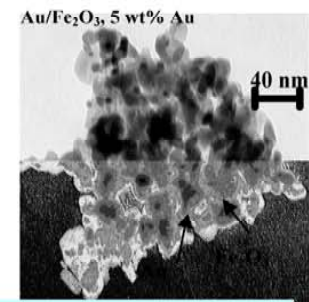
Laser Drilling



Laser Drilled Hole in Stainless Steel



Development of Nanocatalysts



TEM of Au/Fe₂O₃ nanocatalysts