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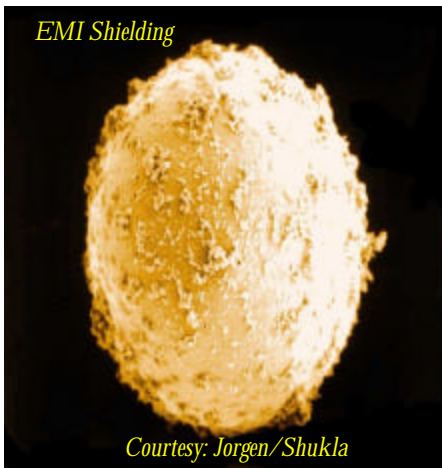
Web:

<http://www-mae.engr.ucf.edu/~sseal/>

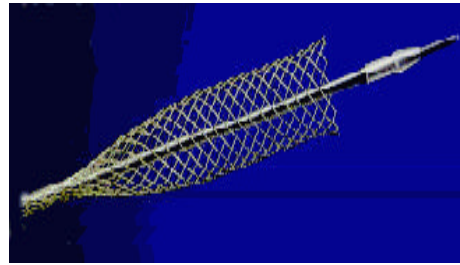
HIGHLIGHTS

Developing Conductive Fillers in SEMP

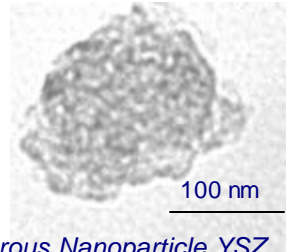
EMI Shielding



Courtesy: Jorgen/Shukla



Stents – Courtesy Bionucleonics



Porous Nanoparticle YSZ



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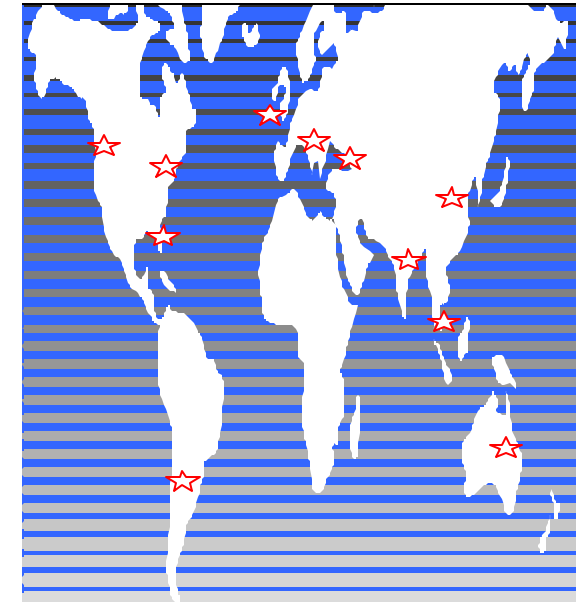
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SURFACE ENGINEERING
AND
NANOTECHNOLOGY
FACILITY

Future Solutions Now



Dr. Sudipta Seal

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AFFILIATION

Faculty in Materials Science and Engineering
(AMPAC) & (MMAE)
Nanoinitiative Coordinator
University of Central Florida
From 1997 August

GOALS

Development and processing of new materials for
academia and industrial needs.

RECENT RESEARCH

Materials Processing

- Nanomaterials, Al-Ti, Nitrides, Composites
- Thin Film deposition
- Oxides and sulfides nanoparticles
- Quasicrystals
- High temperature coatings
- PVD, Melting, Solgel process
- Electroless copper coating, EMI shielding
- Filter material development

Corrosion

- High temperature oxidation of steels, superalloys and CMC, Solgel repair of coatings (TBCs)
- Coatings for industrial application
- Inhibitor development
- Environmental degradation of CMC

Surface Science/Mat Characterization

- Both Instrumentation and application
- XPS, AES, SIMS, NEXAFS, Soft x-ray microscopy, synchrotron radiation
- Characterization of metals, insulators, polymers, semiconductors surface and interfaces

- Chemical Mechanical Polishing (CMP)
- Environmental surface chemistry
- Biomaterials and Chalcogenide glasses
- Stents Research

Polymers

- High-density polymers, membranes
- Polymer surface characterization

SPONSORS

- National Science Foundation (NSF)
- Florida Space Grant Consortium (NASA)
- I-4 Corridor
- University Research Initiation Grant
- AMPAC
- Disney, US-Steel
- NSF/IUCRC - OHIOU
- Ohio University
- Siemens Westinghouse
- Energy Strategy Associates
- Bionucleonics
- USNR Coal Resources
- Lucent Technologies
- US Filter, PPG
- Ford, Plasma Process, NASA SBIR Phil
- Whirlpool, DOE, DOD SBIR I
- ONR YIP, NASA Glenn, FSEC

COLLABORATORS

- AMPAC, CREOL, EEC, CEE, UCF
- Ohio University
- U Tennessee
- Poland
- U California - Berkeley
- Lawrence Berkeley National Laboratory
- Oak Ridge National Laboratory
- Brookhaven National Laboratory
- Lucent Tech, IBM
- IIT, India

- U Memphis
- U Queensland, U New South Wales, Australia
- Laval University, Canada

OTHER FACILITIES

UCF-CIRENT MCF (XPS, AES, SIMS, SEM, TEM, RBS, Sample Prep), Vacuum furnace, Corrosion lab, Microfabrication, Nanomaterial Fab (SEMP), Glasses, CMP lab and other AMPAC Research Facilities.

PAST STUDENTS

Students graduated from this Laboratory are placed throughout the country –

- US Navy
- Applied Materials, Caterpillar
- Motorola – Chicago, Boca Raton
- Siemens Westinghouse
- University of Florida
- Space Alliance, FI

AWARDS

- Marcel Pourbaix
- IMS 1st, 2nd, 3rd
- Dorothy Hoffman
- ECS, AVS, MRS scholarship
- Shell Oil
- UCF Researcher of the Year
- AVS Florida 1st, 2nd, 3rd, Hon. mention
- IMS 1st, 2nd, 3rd
- 2002 ONR YIP Award
- UCF Excellence in Graduate Teaching
- UCF Research Incentive Award