DEPARTMENT OF MECHANICAL & AEROSPACE ENGINEERING

ADVANCED ENERGY MATERIALS & SYSTEMS

ADVANCED NANOMATERIALS for BIOMEDICAL Applications

- Multifunctional Catheters for Brachytherapy
- Biodegradable Photodynamic Therapy
- 3D Tissue Model via Additive Manufacturing
- Self-assembly for Nanostructures
- Multiscale/Multiphysics Modeling/Simulation

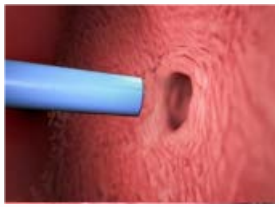
ENERGY STORAGE

- Biomedical Batteries/Biodegradable Batteries
- High Energy/Power Density, Long Cycle Life, Safety
- Next Generation Batteries
- Li-ion/Lead Acid/Flow Batteries for Grid Applications
- Optimal Energy Scheduling in Microgrids

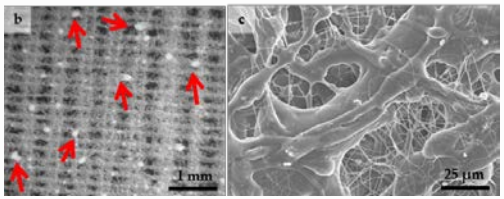
ENERGY CONVERSION SYSTEMS

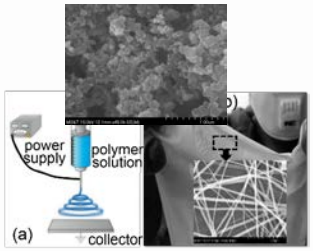
- Development of Novel Ferroelectric Materials
- Development of Micro Fuel Cell Systems

Brachytherapy

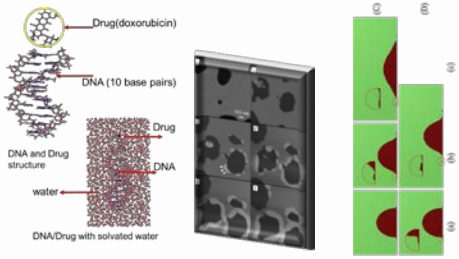


Bioprinting





Nanofiber/ Nanomaterials



Multiscale Simulations

PoC: Jonghyun Park, Assistant Professor
parkjonghy@mst.edu
127 Toomey Hall, 573-341-4699

Funding

- NSF CMMI, CBET, EPCN
- Department of Education
- Microgrid Consortium, UMRB, MRC, CBSE, OBI, ISC

Keywords

- #nanomaterials, #3D printing, #additive manufacturing, #energy storage, #energy conversion, #battery, #nanodevices, #self-assembly, #multiscale model, #multiphysics model

Recognitions

- NSF Innovation Corps, Entrepreneurial Lead (2013)
- Recognition by GM/UM ABCD Institute (2011)
- Outstanding Research, Hyundai Heavy Industries (2004)

MISSOURI S&T