

Current Research Interest of **AMSL@UNLV**

Energy Materials
& Devices

Smart Materials
& Structures

Interfacial Materials
& Structures

TRL-1

“Unique?” Materials Engineering & Applied Physics

Student Training & Education
Academic Publications

Laboratory Prototype
Demonstration

TRL-2

“INDUSTRY” Collaboration & Commercialization

Currently supported by:



ENERGY.GOV



AT UNLV (Kwang Kim's Group)

Education/Training Mission:

Kwang Kim's Laboratory provides an academic environment to UNLV students and researchers to learn and develop necessary engineering skills and attitudes that are needed to become great innovators throughout the course of their career. The laboratory is adequately setup to study engineering science in connection with Energy and Matter that have the broader economic-and-sociological impact on "sustainability and health engineering".

Research Goals:

Design, develop and characterize unique functional and structural materials and surface configurations that can lead to "break-through" in future engineering applications.

AMSL Facilities and Other Resources

- Kim's laboratory, the **Active Materials and Smart Living** (AMSL) laboratory, at UNLV has the state-of-the-art capabilities of fabricating and synthesizing active materials, hydrophobic/hydrophilic materials and their characterization and analysis. Major equipment at the AMSL: mini-SEM, digital optical microscope, Diamond DMA, TGA machine, diff. scanning calorimeter, FT-IR spectrometer, UV-Vis spectrophotometer, Instron mechanical tester, contact angle meter, CNC machine, 3D printers, injection molders, Protomat PCB machine, vibration test system (TIRA), Milli-Q water purification, high voltage amplifier, DC power supplies, potentiostat/booster, CCD laser sensor, data analysis, electrospinning system, spin coater, grinder, flow thru chiller, HR laser displacement sensor, high temperature furnace, tube furnace, etc. Processing capabilities include various dry and wet chemicals; chemical hood, laminar hood; process equipment-mixers, temperature baths/reactors, ovens, micropipettes; vacuum capabilities; flow control; Thermal control; various gas fittings/vacuum fittings; etc. In particular, the Kim's IPMC characterization facility is second-to-none, very unique and well versed in the research community (<http://www.youtube.com/user/kwangkimlab>). For more information, visit: www.kwangjinkim.org. The AMSL is located in the Science Engineering Building (SEB) on the 2nd floor, Room #2112 at UNLV with allocated space of about 2,000 sq. ft. plus additional common space.

