Coatings for Energy Conversion and Related Processes

Energy fits well with the theme of our Symposium topic on Coatings for Healthcare, Biometric Monitoring, and Bio-Interfaces. Coatings for energy conversion and storage provide the mobile power needed for health biometric monitoring. Batteries have always been an issue with mobile monitoring considering their energy storage capacity per weight is low, requiring a relatively large battery compared to the size of electronics and sensors. Thin film batteries provide a solution if the weight, charge capacity, cyclic life and stability can be made acceptable. Solar and ambient light conversion can be achieved with photovoltaics. Energy harvesting technologies include piezoelectrics, antennas for RF harvesting and kinetic energy harvesting. Other health care applications include self-cleaning surfaces, and hydrophilic and hydrophobic surfaces for hospitals. For the transport of medicines and blood, radiative cooling surfaces have been devised. In healthy buildings, developments have been made in catalytic air cleaning surfaces.

The Coatings for Energy Conversion and Related Processes welcomes papers in the following areas:

Solar and Ambient Light Energy Conversion

- Thin-film and thin wafer photovoltaics
- Organic flexible photovoltaics (OPV)
- Semi-transparent photovoltaics
- Coatings for improved performance

Energy Harvesting

- RF Harvesting
- Piezoelectrics
- Kinetic harvesting through body movement

Energy Storage

- Thin flexible batteries
- Conformal batteries
- Coatings for improved stability
- Graphene and carbon nanotubes
- Protective coatings
- Supercapacitors

Efficient Functional Coatings

- Radiative cooling
- Hydrophobic and hydrophilic
- Self-cleaning catalytic coatings
Business Topics

- Market assessment
- Advanced manufacturing processes
- Integration of functional coatings into wearable products

Other traditional subjects of the Coatings for Energy Conversion and Related Processes TAC will be considered including:

- Smart windows
- Selective radiators
- Fuel cells
- Large-scale energy conversion and storage

Invited Speaker:
Marca M. Doeff, Lawrence Berkeley National Laboratory, Berkeley, CA
*The Future of Energy Storage for Vehicle Applications*

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