Dr. Murtuza

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Academic Qualifications		
Degree	***Institute***	***Passing year***
PhD: Mechatronics Engineering "Stretchable films on Rough Ultra-low Modulus PDMS"	Jeju National University, South Korea	2014
M.E: Energy systems	NED University of Engineering and Technology, Pakistan	2008
B.E: Mechanical	NED University of Engineering and Technology, Pakistan	2002

Teaching Perspective

Teaching an engineering course in a way that can result in industry-academics growth and to signify the practical usefulness of the subject that can help in developing the interest for the students irrespective of their engineering discipline.

Teaching Interest

Engineering Mechanics, Engineering Thermodynamics, Energy Engineering, Thermal Hydraulics of two phase flows, Machine Design and Micro Mechanics.

Research Interest

Stretchable Thin Films on Rough Surfaces, Microfabrication, Thin Film Energy Harvesting Devices, Computational Fluid Dynamics, Thermo Fluids , Printed Electronics and Energy Engineering.

Publications

1. Syed Murtuza Mehdi, Kyung Ho Cho and Kyung Hyun Choi. Versatile poly(3,4-ethylenedioxythiophene) poly(styrenesulfonate) films on Polydimethylsiloxane substrates having random micro ridges: Study of resistive behaviors of a polymer-polymer laminate. *Journal of Applied Polymer Science* 132(1): 41235 (2014)
   DOI: 10.1002/app.41235

2. Syed Murtuza Mehdi, Kyung Ho Cho, Kyung Hyun Choi. Stretchability and resistive behavior of silver (Ag) nanoparticle films on polydimethylsiloxane (PDMS) with random micro ridges. *Journal of Material Science: Materials in Electronics* 25(8): 3375-3382 (2014).
   DOI: 10.1007/s10854-014-2028-6

3. Kyung Hyun Choi and Syed Murtuza Mehdi**.** Meniscus height as a function of dimensionless variables for drop-on-demand applications. *Journal of the Korean Physical Society* 62(9): 1247-1251 (2013).
   DOI: 10.3938/jkps.62.1247

4. Syed Murtuza Mehdi, Hyun Woo Dang, Kang Chang Nam and Kyung Hyun Choi. Resistive behavior of silver (Ag) nanoparticle films on ultra-low modulus polydimethylsiloxane (PDMS) with trench type roughness. *Journal of Physics D: Applied Physics* 48: 015303 (2014).
   DOI: 10.1088/0022-3727/48/1/015303

5. Syed Murtuza Mehdi, Jeongdai Jo, Yang Hoi Doh, Hyun Woo Dang, Kyung Hyun Choi. Stretchable and flexible resistive behavior of poly(3,4 ethylenedioxythiophene):poly(styrenesulfonate) thin film on ultra-low modulus polydimethylsiloxane with trench-type roughness. *Journal of Polymer Science B: Polymer Physics.*
   DOI: 10.1002/polb.23615

6. Syed Murtuza Mehdi and Sin Kim. Theoretical study of motion of small spherical air bubbles in a uniform shear flow of water. *Nuclear Engineering and Technology* (Accepted)

International Conference

1. Syed Murtuza Mehdi and Kyung Hyun Choi. Heat transfer coefficient for liquid sodium in developing laminar flow regime. Proceedings of International Conference on Energy and Sustainability-2013, Pakistan. 157-160 (2013).

Fabrication Expertise

1. Thin film fabrication using non vacuum deposition techniques.
2. Substrate preparation. (hydrophilic and hydrophobic)
3. Micro texturing.
4. Solution based conductive ink preparation. (metallic and nonmetallic)

Computer Proficiency

1. Simulation and Modeling Software:

Matlab, Fluent, Star-CD, Comsol Multiphysics, Image-J.

2. Graphing and Fitting:

Origin.

CFD Related Papers

a) Nusselt number calculation of liquid sodium under developing laminar flow regime.
   (International Conference Paper)
b) Friction factor calculation for nanofluid inside micron size tube.
   (Submitted paper)
c) Numerical study of wavy peristaltic tube for laminar convectors.
   (Work under process)