

## **EMC and New Technologies in Automotive Systems**

**Prof. Mark Steffka**

*Electrical and Computer Engineering Department, University of Michigan – Dearborn  
and GM Powertrain EMC Group*

The global automotive industry is undergoing a significant change as a result of the demand for highly efficient vehicle propulsion methods and the driver/passenger benefits of the integration of information, entertainment, and communication systems into the vehicle platform.

For many years, automotive EMC focused primarily on minimizing radio frequency interference (RFI) from the operation of traditional spark and diesel ignition engines and designing onboard systems to be immune to high power sources of radio frequency (RF) energy (such as radio transmitters).

While these basic issues still exist, there are recent advances in automotive technology that now need to be addressed. These include:

- EMC aspects of variable speed electric drives.
- Operation of electro - mechanical devices and EMC.
- Adaptation of “common approaches” from other industries, such as use of special wiring and/or shielding for EMC.
- Wireless system operational parameters and effect of automotive systems.
- Development of “simple” EMC test methods/approaches that any engineer can use.