Proposal for invited session on:
“Model-Based Developments for Embedded and Cyberphysical Systems”
@ 11th IEEE ICNSC, April 19-22, 2014, in Miami, USA: http://www.icnsc.org/

Ratnesh Kumar (Professor, IEEE Fellow) and Jun Chen (PhD Student)
Dept. of Electrical and Computer Engineering, Iowa State University
http://www.ece.iastate.edu/~rkumar

Theme:
Cyber-Physical Systems (CPS) are integrations of physical processes with embedded computers and networks for monitoring and controlling the physical processes through feedback loops where physical processes affect computations and vice versa. Model-based development is key to enabling correct-by-construction design of systems, integrating embedded software and cyberphysical systems, to guarantee their correctness, safety and security. The session will provide a platform for researchers to share new challenges and trends in model-based development for advanced complex applications.

Confirmed Contributors:
   **Authors:** Matthew Anderson and Sandeep K. Shukla
   **Affiliation:** Virginia Tech University, Dept. of Elec. & Comp. Eng

2. **Title:** “Diagnosis in Stochastic Cyberphysical Systems under Temporal Logic Requirements”
   **Authors:** Jun Chen and Ratnesh Kumar
   **Affiliation:** Iowa State University, Dept. of Elec. & Comp. Eng.

3. **Title:** “Positive Systems Theory and Correctness of Hybrid Systems”
   **Authors:** Sriram Sankaranarayanan
   **Affiliations:** University of Colorado, Dept. of Comp. Sc.

4. **Title:** “A new Abstraction-Refinement based Verifier for Modular Linear Hybrid Automata”
   **Authors:** 1Hao Ren, 2Jing Huang, 3Shengbing Jiang, and 4Ratnesh Kumar
   **Affiliation:** 1Iowa State University, Dept. of Elec. & Comp. Eng., 2Freescale Semiconductor Inc, and 3General Motors R&D

5. **Title:** “Control of a class of Dynamic Hybrid Systems using Time Petri Nets with Memory-Enabled Tokens”
   **Authors:** Nejib Ben Hadj-Alouane
   **Affiliations:** Manouba University, Tunisia, School of Computer Sciences

6. **Title:** “Secrecy in Stochastic Discrete Event Systems”
   **Authors:** Mariam Ibrahim, Jun Chen, and Ratnesh Kumar
   **Affiliations:** Iowa State Univ., Dept. of Elec. & Comp. Eng.