

Control System Design Session

Session Chair: Subbaram Naidu, Idaho State University

Session Description

1. Technical Focus and Overview

Regarding Resilient Control Systems (RCS), we focus on

- (a) What is the concept and what are the broad and precise definitions of RCS?
- (b) What are the characteristic features of RCS?
- (c) How is RCS different from the existing control design tools such as Optimal, Robust, Adaptive, Reconfigurable, Fault-Tolerant, and Intelligent Control Systems?
- (d) How to design an RCS to protect the system against all internal and/or external disturbances and/or threats?
- (e) What are the issues, challenges and opportunities in RCS?
- (f) What are the recommendations for making RCS a powerful design tool?

2. Topical Areas for Discussion in Breakout

- (a) Risk
 - i. Process Hazards
 - ii. Cyber Security
 - iii. Graded Approach
- (b) Design Solutions
 - i. Intelligent and Advanced Control Theory
 - ii. Redundancy, Diversity and Defense in Depth
- (c) Design Integrity
 - i. Modeling and Simulation
 - ii. Testing Regime
 - iii. Certification

3. Introduction of Session Speakers

- (a) Dr. Venkat Venkatasubramanian - Purdue University
- (b) Dr. Alexander Chernoguzov - Honeywell