# INVITED SESSION SUMMARY

<table>
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<tr>
<th><strong>Title of Session:</strong></th>
<th>Immunity-Based Systems: Resilient Computing for IoT</th>
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| **Name, Title and Affiliation of Chair:** | Prof. Dr. Yoshiteru Ishida, Toyohashi University of Technology  
Associate Prof. Dr. Takeshi Okamoto (Kanagawa Institute of Technology, Japan) |
| **Details of Session (including aim and scope):** | Immunity-based Systems (or Artificial Immune Systems) have been attracting a broad attention as an alternative avenue to build intelligent and life-like systems. Systems based on and inspired from the immune system indicate not only tolerant to noise by autonomous and distributed agents, but adaptive to dynamically changing environment. As a specific topic, we also focus on the application to resilient computing that can reduce or prevent damages in disaster situation, and the systems that utilize IoT and/or big data. Further, Science and Engineering related to collective intelligence such as formation robots and satellites are also called for. This session calls for papers related to Immuno-engineering, Immuno-computing and Immuno-informatics. Specific topics of interest include but not limited to: |
| | • Immunity-based systems that utilize IoT and/or big data  
• Immuno-design  
  e.g. Designing Resilient Systems, Matching Based Design  
• Immuno-modeling  
  e.g. Game theoretic approach, Cellular Automata, Asymmetric Interaction  
• Immuno-engineering  
  e.g. Signal profiling, Sensor Systems, Applications to the Environmental Problems, Robust and adaptive design; Self-diagnosis, self-maintenance and self-organization; Security of information network  
• Immuno Intelligence, Bio Intelligence and other Natural Intelligence  
  e.g. Artificial Intelligence and Natural Intelligence; Specific feature of Immuno Intelligence; Comparison of Immuno Intelligence to other Natural Intelligences; Bio Intelligence and Physical Intelligence; Degeneracy in Bio Intelligence and Physical Intelligence  
• Immuno-informatics  
  e.g. Analysis and simulation of the immune system as a Complex System; Application to monitoring the immune system; Application to medication  
• Immuno-computing  
  e.g. Computational approach to the Immunity-Based Systems; Learning and adaptive algorithms; Artificial Life; Multi-agent systems  
• Disaster reduction, risk management and environment monitoring by Immunity-based Systems |
| **Main Contributing Researchers / Research Centres (tentative, if known at this stage):** | Prof. Dr. Yoshiteru Ishida (TUT, Japan)  
Associate Prof. Dr. Takeshi Okamoto (KAIT, Japan) |
| **Website URL of Call for Papers (if any):** | TBA |
Email & Contact Details:
ishida@sys.cs.tut.ac.jp