

2014 IEEE 22nd Annual Symposium on High-Performance Interconnects

(HOTI 2014)

**Mountain View, California, USA
26-28 August 2014**



IEEE Catalog Number: CFP14HIS-POD
ISBN: 978-1-4799-5861-0

2014 IEEE 22nd Annual Symposium on High-Performance Interconnects

HOTI 2014

Table of Contents

Message from the General Co-Chairs	vii
Message from the Technical Program Chairs	ix
Organizing Committee	x
Steering Committee	xi
Technical Program Committee	xii
Tutorial Reviewers	xiii
Keynotes	xiv
Invited Talks	xx
Executive Roundtable	xxiii
VC Forum	xxiv
Tutorials	xxv
Acknowledgements	xxx

Session I - High-Speed Interconnects

Modeling and Evaluation of Chip-to-Chip Scale Silicon Photonic Networks	1
<i>Robert Hendry, Dessislava Nikolova, Sébastien Rumley, and Keren Bergman</i>	
Accelerating Spark with RDMA for Big Data Processing: Early Experiences	9
<i>Xiaoyi Lu, Md. Wasi-Ur-Rahman, Nusrat Islam, Dipti Shankar, and Dhabaleswar K. (D.K.) Panda</i>	
End-to-End Adaptive Packet Aggregation for High-Throughput I/O Bus Network Using Ethernet	17
<i>Jun Suzuki, Yuki Hayashi, Masaki Kan, Shinya Miyakawa, and Takashi Yoshikawa</i>	

Session II - Switch Memory/TCAM

Strategies for Mitigating TCAM Space Bottlenecks	25
<i>Kirill Kogan, Sergey Nikolenko, Patrick Eugster, and Eddie Ruan</i>	

The Buffer Size vs Link Bandwidth Tradeoff in Lossless Networks	33
<i>Alexander Shpiner, Eitan Zahavi, and Ori Rottenstreich</i>	

Session III - Interconnects for High-Performance Computing

Quasi Fat Trees for HPC Clouds and Their Fault-Resilient Closed-Form Routing	41
<i>Eitan Zahavi, Isaac Keslassy, and Avinoam Kolodny</i>	
Reuse Distance Based Circuit Replacement in Silicon Photonic Interconnection Networks for HPC	49
<i>Ke Wen, David Calhoun, Sébastien Rumley, Xiaoliang Zhu, Yang Liu, Lian-Wee Luo, Ran Ding, Tom Baehr-Jones, Michael Hochberg, Michal Lipson, and Keren Bergman</i>	
The Tofu Interconnect 2	57
<i>Yuichiro Ajima, Tomohiro Inoue, Shinya Hiramoto, Shun Ando, Masahiro Maeda, Takahide Yoshikawa, Koji Hosoe, and Toshiyuki Shimizu</i>	

Session IV - Network Traffic and Protocols

Characterizing Traffic Locality in 3D NoC-Based CMPs Using a Path-Based Partitioning Method	63
<i>Poona Bahrebar and Dirk Stroobandt</i>	
Traffic Optimization in Multi-layered WANs Using SDN	71
<i>Henrique Rodrigues, Inder Monga, Abhinava Sadasivara, Sharfuddin Syed, Chin Guok, Eric Pouyoul, Chris Liou, and Tajana Rosing</i>	
IBRMP: A Reliable Multicast Protocol for InfiniBand	79
<i>Qian Liu and Robert D. Russell</i>	
Author Index	87