



*Special Section on Next-Generation Information Technology
Based on Knowledge Discovery and Knowledge Federation
: Hokkaido University Global COE Program and
Research Projects on ICT in Hokkaido*



Editorial Preface	Masanori KOSHIBA	815
1. What's Knowledge Creation Science ?	Hiroki ARIMURA	816
2. Interdisciplinary Research Project on Knowledge Software Science	Hiroki ARIMURA	819
3. Interdisciplinary Research Project on Biological Science Hidemi WATANABE, Shun'ichi KANEKO, and Miki HASEYAMA		822
4. Interdisciplinary Research Project on Nanotechnology	Kazuhisa SUEOKA	828
5. Interdisciplinary Research Project on Media and Network Technologies Yoshikazu MIYANAGA, Shingo YOSHIZAWA, and Shin-ichi MINATO		833
6. Research Projects on ICT in Hokkaido Koichi HIRAYAMA, Yukinori SUZUKI, Nobuhiro MIKI, and Hirofumi SANADA		837

Technical Survey

Trend on Wireless LAN Mesh Networks Shiro SAKATA, Akira YAMADA, Hiroyuki IIZUKA, and Tetsuya ITO		841
Accessibility for Hearing-Impaired Persons	Yuji NAGASHIMA and Sumihiro KAWANO	847
Implementations of Bayesian Learning	Takashi MATSUMOTO	853
Lidar Techniques for Measurement of Atmospheric Carbon Dioxide Kohei MIZUTANI and Shoken ISHII		861
Copyright Management for Digital Contents and Formal Method	Kunihiko FUJITA	866
Automatic ELISA Micro-chip with Integrated Microfluidic and Sensing Functions Michinobu MIEDA, Toshiaki KITAGAWA, Yuichiro SHIMIZU, Naomi ASANO, and Yoshiro AKAGI		871

Lecture Series

Mathematical Morphology : Basics and Recent Advances Akira ASANO and Hajime NOBUHARA		876
Recent Advances and Applications on Bayesian Theory [I] : An Introduction to Hierarchical Bayesian Models	Takuya KUBO	881

Contribution

Fundamental Attitude When Engaged in Information Technology	Masao KASAHARA	886
---	----------------	-----

Tutorials

ITS Inter-vehicle Communication System : Towards the Reduction of Traffic Accidents by Wireless Communication Technology	Ryu MIURA	893
Recent Progress of Optical Data Storage Techniques of 1TByte Capacity	Yoshimasa KAWATA	896

News Analysis

Research Prototyping the Programmable Flow-switch : New Generation Networking Technology Essentially Innovate the Internet Mechanism		898
Success in Enhancement of Spin Lifetime in Semiconductors : Progress to Realize Spin Field Effect Transistor		899