



**INTERNATIONAL
SYMPOSIUM ON
OPTICAL
MEMORY 1998**

OCTOBER 20~22, 1998

**AUDITORIUM AIST TSUKUBA RESEARCH CENTER
TSUKUBA, JAPAN**

**TECHNICAL
DIGEST**

TECHNICAL PROGRAM

October 20, 1998 (Tuesday)

Welcome and Opening Remarks (9:15-9:25)

K. Goto (Tokai Univ., Japan)
Steering Committee, Chairperson

Keynote Session (9:25-9:45)

Presider: Y. Mitsuhashi (Nippon Sheet Glass, Japan)
Organizing Committee, Chairperson

Tu-A-01 (Keynote)

9:25 Technology Jump of Optical Storage

N. Atoda (NAIR, Japan)..... 2

DVD-ROM (9:45-10:30)

Presider: Y. Honguh (Toshiba, Japan)

Tu-B-01 (Invited)

9:45 15Gbyte DVD System Using a Liquid Crystal Panel

S. Ohtaki, M. Ogasawara, N. Murao, M. Iwasaki (Pioneer, Japan)..... 6

Tu-B-02

10:15 Process Margin of 15 Gbyte Disc Mastering Using Photobleachable Dye

Y. Okumura, T. Higuchi, T. Iida (Pioneer, Japan)..... 8

Coffee Break (10:30-10:45)

Holographic Memories (10:45-12:00)

Presiders: S. Yagi (NTT, Japan)
L. Hesselink (Stanford Univ., U.S.A.)

Tu-C-01 (Invited)

10:45 Non-Volatile Digital Holographic Memories

L. Hesselink (Stanford Univ., U.S.A.)..... 12

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11:15 Implementation of Holographic Optical Disc

G. Zhou, A. Pu, O. Ivanova, F. Mok, D. Psaltis (Holoplex Inc., U.S.A.)..... 14

Tu-C-03

11:30 Stoichiometric LiTaO₃ as Digital Holographic Data Storage Material

Y. Furukawa, K. Kitamura, K. Niwa, H. Hatano*, P. Bernasconi**,
G. Montemezzani**, P. Gunter**
(NIRIM, Japan, *Pioneer, Japan, **Inst. of Quantum Electronics, Switzerland)..... 16

Tu-C-04

- 11:45 Optimization of Oxidation State of Fe and Digital Holographic Recording in Stoichiometric Fe: LiNbO₃**
Hatano, T. Yamaji, S. Tanaka, Y. Furukawa*, K. Kitamura*
(Pioneer, Japan, *NIRIM, Japan)..... 18

Lunch (12:00-13:00)

Head/Drive I (13:00-14:30)

Presiders: J. Ichihara (Fujitsu, Japan)
J. E. Davis (Quinta, U.S.A.)

Tu-D-01

- 13:00 Holographic Laser Module with Dual Wavelength for DVD Optical Heads**
H.-F. Shih, T.-P. Yang, M.O. Freeman, J.-K. Wang, L.-H. Hsu, D.-R. Huang,
H.-F. Yau* (ITRI, R.O.C., *Nat'l. Cent. Univ., R.O.C.)..... 22

Tu-D-02

- 13:15 Robust Focus and Tracking Detection for Integrated DVD Optical Heads**
M.O. Freeman, H.-F. Shih*, J.-K. Wang, T.-P. Yang, L.-H. Hsu
(ITRI, R.O.C., *Nat'l Cent. Univ., R.O.C.)..... 24

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H. Koyanagi, T. Maeda (Pioneer, Japan)..... 26

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- 13:45 Reconfigurable Diffractive Optical Elements by Coded Aperture for Optical Storage Systems**
N.Yoshikawa, M. Itoh, T. Yatagai (Univ. of Tsukuba, Japan)..... 28

Tu-D-05 (Invited)

- 14:00 InGaN-based Violet Laser Diodes**
S. Nakamura (Nichia Chemical Industries, Japan)..... 30

Coffee Break (14:30-14:45)

Head/Drive II (14:45-15:45)

Presiders: F. Yokogawa (Pioneer, Japan)
G. -F. Zhou (Philips, Netherlands)

Tu-E-01

- 14:45 Land/Groove Signal and Differential Push-pull Signal Detection by Improved 3-Beam Method**
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	S. Miyanabe, H. Kuribayashi, K. Yamamoto (Pioneer, Japan).....		36
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	K. Tanaka, K. Fujita, T. Sakamoto, K. Nagashima, Y. Negishi (Teikyo Heisei Univ., Japan).....		38
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Advanced Magneto-Optical Recording (15:45-17:15)			
Presiders: A. Takahashi (Sharp, Japan)			
H. -P. D. Shie (Nat'l Chiao Tung Univ., R.O.C.)			
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	A. Itoh (Nippon Univ., Japan).....		44
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16:15	Jitter Characteristics in the Domain Wall Displacement Detection Method		
	T. Shiratori, E. Fujii, Y. Miyaoka, Y. Hozumi (Canon, Japan).....		46
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	T. Tokunaga, Y. Fujii, K. Yamada (Mitsubishi Elec., Japan).....		48
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17:00	Detection of High Track Density Recorded Mo-disk		
	Combining an Optical Phase Shifter on Deep Groove Recording		
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Banquet (18:30-20:30)

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Signal Processing for Recording Channel (8:45-9:45)

Presider: K. Tanaka (Teikyo Heisei Univ., Japan)

We-G-01 (Invited)

- 8:45 A Challenge to Archive a High Density Optical Disc
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- 9:15 Partial-response and Full-response Maximumlikelihood Bit Detection
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Advanced Phase Change Recording (10:00-12:00)

Presiders: T. Ohta (Matsushita, Japan)

D. -R. Huang (ITRI, R.O.C.)

We-H-01 (Invited)

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Night Session (18:00-20:00)

October 22, 1998 (Thursday)

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**Presiders: A. Morimoto (Asahi Chemical, Japan)
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Th-M-01 (Invited)

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**Presiders: H. Iwasaki (Ricoh, Japan)
G. Knight (TeraStore, U.S.A.)**

Th-N-01 (Invited)

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Presiders: J. Saito (Nikon, Japan)
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Closing Remarks (16:45-17:00)

S. Kubota (Sony, Japan)

Program Committee, Chairperson

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