

ISOM'91

**INTERNATIONAL
SYMPOSIUM ON
OPTICAL
MEMORY 1991**

OCTOBER 1~4, 1991

SAPPORO JAPAN

**TECHNICAL
DIGEST**

Technical Program

OCT. 1, 1991 (Tuesday)

| | | | |
|-------------------|------|---|----|
| 9:45 AM—10:00 AM | | Welcome and Opening Remarks Y. Sakurai (<i>Setsunan Univ., Japan</i>) <i>Organizing Committee, Chairperson</i> R. Ito (<i>Univ. of Tokyo, Japan</i>) <i>Program Committee, Chairperson</i> | |
| 10:00 AM—12:00 PM | 1A | Media I Presiders: T. Kubo (<i>Shizuoka Univ., Japan</i>) G. Sincerbox (<i>IBM, U.S.A.</i>) | |
| (Invited) | 1A-1 | High Data Rate Optical Recording Systems M.E. Meichle (<i>Eastman Kodak, U.S.A.</i>) | 3 |
| (Invited) | 1A-2 | Recording Mechanism in Metallized Overcoated Dye Layers on Polycarbonate Substrates A.H.M. Holtslag, E.F. McCord* and G.H. Werumeus Buning (<i>Philips Research Labs., *E.I. du Pont, The Netherlands, *U.S.A.</i>) | 5 |
| (Invited) | 1A-3 | Research Activities of Optical Storage in China F.X. Gan (<i>Shanghai Ins. of Opt. & Fine Mec., P.R. China</i>) | 7 |
| (Invited) | 1A-4 | Performance of Modulation Codes in various Optical Recording Media C.M.J. van Uijen and J.H.M. Spruit (<i>Philips Research Labs., The Netherlands</i>) | 9 |
| 12:00 PM— 1:30 PM | | Lunch | |
| 1:30 PM— 3:00 PM | 1B | Visible Lasers Presider: S. Kubota (<i>Sony, Japan</i>) | |
| (Invited) | 1B-1 | Visible Laser Devices Based on Nonlinear Upconversion of Diode Laser Sources W.J. Kozlovsky, W.P. Risk and W. Lenth (<i>IBM Research Div., U.S.A.</i>) | 13 |
| (Invited) | 1B-2 | A Shot Noise-Limited SHG Green Laser for Higher Density Optical Disks M. Oka and S. Kubota (<i>Sony, Japan</i>) | 15 |
| (Invited) | 1B-3 | High Power InGaAlP Laser Diodes for High Density Optical Recording G. Hatakoshi, K. Nitta and M. Okajima (<i>Toshiba, Japan</i>) | 17 |
| 3:00 PM— 3:30 PM | | Coffee Break | |

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| 3:30 PM— 5:30 PM | 1C | Head Technology Presiders: J.J. Burke (<i>The Univ. of Arizona, U.S.A.</i>) H. Nishihara (<i>Osaka Univ., Japan</i>) | |
| | 1C-1 | High-Power, 790 nm, Eight-Beam AlGaAs Laser Array with a Monitoring Photodiode K. Minakuchi, Y. Bessho, Y. Inoue, K. Komeda, N. Tabuchi, K. Tominaga, A. Tajiri, K. Yodoshi and T. Yamaguchi (<i>Sanyo Electric, Japan</i>) | 21 |
| | 1C-2 | A Basic Experiment for Applying a Liquid Crystal Microlens to an Optical Head M. Ishigame, T. Nose, S. Masuda and S. Sato (<i>Akita Univ., Japan</i>) | 23 |
| | 1C-3 | Improvement in Thermal Properties of a Flying Optical Head with a Diamond Coated Slider H. Ukita, H. Nakada and T. Abe (<i>NTT Applied Electronics Labs, Japan</i>) | 25 |
| | 1C-4 | An Integrated-Optic Parallel Data Pickup Device S. Ura, M. Shinohara, T. Suhara and H. Nishihara (<i>Osaka Univ., Japan</i>) | 27 |
| | 1C-5 | An Integrated Optical Pickup with Small Wavelength Aberration H. Kando, M. Kainuma, M. Muranishi, A. Ichikawa and Y. Kusano (<i>Hitachi, Japan</i>) | 29 |
| | 1C-6 | Focusing Error Detection Using a Mixed Aberration Generating HOE Y. Honguh and I. Hoshino (<i>Toshiba, Japan</i>) | 31 |
| 6:00 PM— 8:30 PM | | Reception (Room Zuisetsu, Koseinenkin Kaikan) | |

OCT. 2, 1991 (Wednesday)

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| 9:30 AM—11:50 AM | 2D | High Density Recording President: M. Ojima (<i>Hitachi, Japan</i>) | |
| (Invited) | 2D-1 | Multi-Layered Magneto-Optical Disks for Magnetically induced Super Resolution M. Kaneko, K. Aratani and M. Ohta (<i>Sony, Japan</i>) | 35 |
| (Invited) | 2D-2 | Possibility of Super-Resolution Readout in Optical Disc Heads S. Suhara and H. Nishihara (<i>Osaka Univ., Japan</i>) | 37 |
| | 2D-3 | High Density Recording using Mark Length Recording Method for Magneto-optical Disk T. Iwanaga and H. Inada (<i>NEC, Japan</i>) | 39 |
| | 2D-4 | Super-Resolution of Optical Disk using a Small Aperture A. Fukumoto and S. Kubota (<i>Sony, Japan</i>) | 41 |

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| | 2D-5 | High-Density Magneto-Optical Disk System Using Magnetically Induced Super Resolution | 43 |
| | | S. Yoshimura, A. Fukumoto, M. Kaneko and H. Owa (<i>Sony, Japan</i>) | |
| | 2D-6 | High Density Overwriting on The Magneto-Optical Disk with Exchange-Coupled Triple-Layer Film | 45 |
| | | A. Nakaoki, S. Tanaka, T. Shimouma and M. Kaneko (<i>Sony, Japan</i>) | |
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| | 2E | Poster I | |
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| | | F. Yamada and K. Ohishi* (<i>IBM Research, *Nihon Unisys, Japan</i>) | |
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| | | T. Koda, T. Kawashima, G. Fujita and T. Watanabe (<i>Sony, Japan</i>) | |
| | 2E-4 | Error Propagation due to Dusts on a Thin Substrate Disk | 55 |
| | | K. Seo, T. Kawashima, T. Yamagami and T. Watanabe (<i>Sony, Japan</i>) | |
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| | | K. Taki, R. Matsuda, Y. Ohashi, T. Hamaguchi and H. Maruyama (<i>Brother Ind., Japan</i>) | |
| | 2E-6 | M-O Disk Made by Using Tb-Rich Sputtering Area | 59 |
| | | T.J. Shiau, D.R. Huang, C.H. Huang, S. Chao* and C.S. Tsai* (<i>ITRI, *Nat'l Tsing Hua Univ., Taiwan</i>) | |
| | 2E-7 | Stress Effect Induced by Dielectric Layer on the Magnetic and Optical Properties of TbFeCoCr Thin Films | 61 |
| | | K.C. Kim, Y.S. Kim, K.M. Hong, D.W. Yun and H. Moon (<i>GoldStar, Korea</i>) | |
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| | | S. Sugita (<i>National Museum of Ethnology, Japan</i>) | |
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| | | J. Iisaka (<i>Canada Ctr. for Remote Sensing, Canada</i>) | |
| OCT. 3, 1991 (Thursday) | | | |
| 9:30 AM—12:30 PM | 3G | Drive Technology Presiders: T. Murakami (<i>Toshiba, Japan</i>) T.A. Shull (<i>NASA, U.S.A.</i>) | |

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| | | M. Ogawa and T. Furukawa (<i>Mitsubishi Electric, Japan</i>) | |
| | 3G-6 | Stacked Optical Disk System for Multi-Media File | 123 |
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OCT. 4, 1991 (Friday)

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| 9:30 AM—11:50 AM | 4H | Media II | |
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| (Invited) | 4H-3 | Metallic Superlattice Thin Films for Optical Storage | 135 |
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| | 4H-5 | Domain Formation and Erasure in Co/Pt Multilayer Recording Thin Films | 139 |
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| 11:50 AM— 1:30 PM | | Lunch | |
| 1:30 PM— 3:00 PM | 4I | Poster II & Post-deadline Papers | |
| 3:30 PM— 5:00 PM | | Preview | |
| | | Presentation | |
| | | Presiders: N. Funakoshi (<i>NTT, Japan</i>) | |
| | | H. Inada (<i>NEC, Japan</i>) | |
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| | 4I-5 | Life Estimation Technique for Compact Disk | 153 |
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| | 4I-6 | Stimulated Electronic Transition Concept for an Erasable Optical Memory | 155 |
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| 4I-11 | An Index-Free Full-Text Search Function Installed into Optical Disk Drive K. Murai, Y. Takagi, Y. Azumatani, Y. Fukusima and I. Satoh (<i>Matsushita Elec. Ind., Japan</i>) | 165 |
| 4I-12 | Phase Shift-type Apodizer Composed of three or four Portions H. Ando (<i>Toshiba Corp., Japan</i>) | 167 |
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5:00 PM— 5:10 PM

Closing Remarks

Y. Mitsuhashi (*Nippon Sheet Glass, Japan*)
Steering Committee, Chairperson