Technical Program
MORIS 1991

Tuesday, April 16, 1991

OPENING REMARKS
Uchiyama, S

16-A KEY NOTE TALK

16-A-01 Magneto-Optical Recording Materials-Past, Present and Future (Invited)
Gambino, R.J.
16-A-02 Overview of Rewritable Optical Technology and Market (Invited)
Aoki, Y.

16-B MULTI-LAYERS I

16-B-01 Magnetic Structure, Anisotropy and Magneto-Optic Properties of Amorphous Rare-Earth Multilayers (Invited)
Sellmyer, D. J
16-B-02 Theory of the Magnetization and Curie Temperature of Cobalt-Based Ultrathin Films and Multilayers (Invited)
Bruno, P.
16-B-03 Preparation and Properties of Co/Pt Multilayers
Krishnan, R., Porte, M. and Tessier, M.
16-B-04 Optical, Magneto-Optical and Related Properties for Pt and Co Multi-Layer Structures
Carey, R., Newman, D.M., Sandoval, P.A.G., Thomas, B.W. J., Grundy, P. J. and Lacey, E.T.M.
16-B-05 Spectra of Magnetooptical Kerr Rotation and Ellipticity in Pt/Co Multilayered Films
Sato, K., Hongu H., Tsuzukiyama, K., Watanabe, J. and Togami, Y.
16-B-06 Magnetic Properties of Fe/Pt Multilayer Films
Wigen, P.E., Zhang, Z., Iwata, S., Parkin, S.S.P. and Suzuki, T.

16-C MAGNETO-OPTICAL EFFECTS & MAGNETISM I

16-C-01 Theory of Magneto-Optical Effects in Magnetic Multilayers (Invited)
Visnovsky, S.
16-C-02 Theory of the Magneto-Optical Properties of Transition Metal and Rare Earth Compounds (Invited)
Herman, F., Sticht, *J.*, and Openeer, *P.*
16-C-03 Complex Polar Kerr Spectra in Amorphous TbFe Films
Krishnan, R., Sikora, T., Siroky, *P.*, Tessier, M. and Visnovsky, S.
16-C-04 Faraday Effect in Ir-Substituted Magnetic Garnet
Shinagawa, K., Tamanoi, K., Nomoto, T., Saito, T., Sato, *H.* and Tsushima, T.
16-C-05 Distribution of Magnetization in Exchange Coupled Co/TbFeCo Double Layered Films
Wakabayashi, *H.*, Notarys, H.* and Suzuki, T.*

16-D M-O VERSUS OTHER MEMORIES

16-D-01 Critical Issues in the Characterization of Magneto-Optic Media (Invited)
Hurst, *J.E.*, Cheng, D. and Davis, C.R.
16-D-02 Phase Change Optical Storage-A Critical Assessment (Invited)
Rubin, K.A.
16-D-03 Magnetic Disk Storage Technology and its Future Prospects (Invited)
Miura, Y.

16-E ULTRA HIGH DENSITY M-O MEMORIES-FUTURE PROSPECTS-
(EVENING SESSION, PANEL DISCUSSION)

16-E-01 Opportunities in High Density Magneto-Optical Recording (Invited)
Kryder, M.H.
16-E-02 Magneto-Optical Disk in 21th Century (Invited)
Imamura, N.
16-E-03 The Challenges of the Super-Micro MO Disk (Invited)
Tsunoda, Y.
16-E-04 Blue laser Devices for High-Density Optical Recording (Invited)
Lenth, W.
16-E-05 Materials' Challenges for Metal Multilayers as a Magneto-Optical Recording Medium (Invited)
Carcia, P.F., Zeper, W.B.* and van Kesteren, H.W.
16-E-06 Challenges in Magneto-Optic Media for Ultra High Density Recording (Invited)
Lin, C.-J.

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17-F RE-TM & OTHER MATERIALS I

17-F-01 Mass Production of High Performance Magneto-Optical Disks by In-Line Sputtering Process (Invited)
Jang. Y .-K. and Selhofer, H.
17-F-02 Magneto-Optic RE TM Alloys-The Step to Industrialization- (Invited)
Hartmann, M., Spruijt, A., Disbergen, J., Verhoeven, J., Johnson, G.H. and Mergel, D.
17-F-03 Magneto-Optical and Magnetic Properties of Exchange-Coupled TbNdFeCo Films
Fujii, Y., Hashima, K, and Tsutsumi, K.
17-F-04 Magnetic and Magneto-Optical Properties of MnBiRe Thin Films
Fang, R.-Y ., Li, D.-L., Dai, D.-S., Zhang, *X*.-*X*. and Qi, *X*.-S .
17-F-05 Perpendicular Magnetic Anisotropy in Two Phase PtMnSb-Mn_2Sb Thin Films
Matsui, T., Iketani, N., Morii, K. and Nakayama, Y.

17-G NOVEL MATERIALS

17-G-01 Recent Developments in Magnetooptics of Uranium Compounds (Invited)
Schoenes, J. and Brandle, H.
17-G-02 Garnets and Ferrites for Magneto-Optical Recording (Invited)

Hansen, P., Mergel, D. and Krumme, J.-P.

17-G-03 Particulate Films for Magneto-Optical Recording-Design and Characteristics of the Film-
Gomi, M. and Abe, M.

17-G-04 Crystallization Kinetics of Garnet Films for M-O Recording Prepared by Pyrolysis
Nakagawa, K., Odagawa, K. and Itoh, A.

17-G-05 Bismuth Substituted Garnet Films Sputtered on Chromium Coated Glass Substrate
Challeton, D., Mouchot, J., Bechevet, B., Renard, S., Blanchard, B., Armand, M.F., Rolland, B. and Valon, B.

17-G-06 Magneto-Optical Properties of Pb-Bi-Co-Fe Hexagonal Ferrite Films
Hiratsuka, N., Fujita, M. and Sugimoto, M.

17-H ADVANCED CHARACTERISATION TECHNIQUES

17-H-01 Magnetic Force Microscopy-Recent Advances and Applications to Magneto-Optic Recording (Invited)
Grutter, P., Ruger, D., Albrecht, T.R. and Mamin, H.J.

17-H-02 Characterization by High-Resolution Electron Microscopy (Invited)
Smith, D.

17-H-03 Scanning Magnetic Force Microscopy on Co/Pt Magneto-Optical Disks
van Kesteren, H.W., den Boef **A.** J., Zeper, W.B., Spruit, J.H. M., Jacobs, B **.A.** J, and Carcia, P.F. *

17-H-04 FMR Study on Under-Layer Sputter-Etching Effect for GdTbFeCo Thin Films
Karube, H. and Okada, 0.

17-H-05 Studies on the Thermal Stability of Pd/Co Multilayered Films Using XRD and TEM Observations
Nakazawa, H., Takatsuka, *Y.* and Yorozu, *T.*

17-P OXIDES (POSTER SESSION)

17-P-01 Particulate Films for Magneto-Optical Recording I. Theory of the Magneto-Optical Effect
Abe, M. and Gomi, M.

17-P-02 Particulate Films for Magneto-Optical Recording II. Preparation of the Fine Particles
Fujimoto, T., Kumura, *Y* ., Gomi, M. and Abe, M.

17-P-03 Particulate Films for Magneto-Optical Recording 111. Preparation of the Films
Kumura, Y., Fujimoto, T., Gomi, M. and Abe, M.

17-P-04 Magneto-Optical Properties of Composite Films of Magnetite Fine Particles Solidified by Polyvinyl Alcohol
Yamaguchi, K., Ohmori, K., Murakami, T., Matsumoto, K. and Fujii, T.

17-P-05 Magnetic and Magneto-Optical Properties of Transparent Films Composed of Co-Substituted-Ba Ferrite Fine Particles Dispersed in a Resin
Matsumoto, K., Sasaki, S., Okamoto, I.,* Yamaguchi, K. and Fujii, T.

17-P-06 The Impact of the RF-Dischargs on the Parameters of Thin Ferrite Garnet Films
Il'yashenko, E.I., Klin, V.P., Nikolskiy, A.G., Nam, B.P. and Solov'yov, A.D.

17-P-07 Magneto-Optic Properties of Bi-Substituted Garnet Films with Noble Metal Reflectors
Shen, D. and Du, T.

17-P-08 Magnetic and Magneto-Optical Properties of Mn Substituted Bi-YIG Sputtered Films
Komuro, E., Namikawa, T. and Yamazaki, Y.

17-P-09 Magneto-Optical Recording on Ce-Substituted Sputtered Garnet Media Using Laser Diode
Shono, K., Kuroda, S. and Ogawa, S.

17-P-10 Faraday Effect in Cerium-Nickel Substituted Barium Ferrite Thin Films
Kotnala, R.K., Shimai, K., Gomi, M. and Abe, M.

17-P-11 Pulse Remagnetization Mechanisms of Magnetooptical Iron Garnet Films
Randoshkin, V.V.
17-P-12 Unusual Domain Wall Dynamics in Magnetooptical Iron Garnet Films with Orthorhombic Anisotropy
Randoshkin, V.V., Logunov, M.V., and Sazhin, Y.N.

17-Q MAGNETO-OPTICAL EFFECTS & MAGNETISM I1 (POSTERSESSION)

17-Q-01 The Magnetization Reversal Fields of Multilayered Films Used for Magneto-Optical Memory
Filippov, B.N. and Shmatov, G.A.
17-Q-02 Magnetization and Perpendicular Anisotropy in Pt/Co Muitilayer Film
Wang, Y. J., and Kleemann, W .
17-Q-03 Magnetic Domain Structures of Co/Pt Multilayers
Tanimoto, *H.*, Nawate, M., Honda, S. and Kusuda, T.
17-Q-04 Feasibility Study of In-Plane Magnetized Magneto-Optical Disk
Fujinaga, T.
17-Q-05 Optical Properties of Fe,Ol-, Oxide-Metal Composite Films
Kawagoe, T. and Mizoguchi, T.
17-Q-06 Magneto-Optic Properties of Amorphous Nix-YI-, Films
Contreras, M.C., Colino, J., Alameda, J.M., Lagunas, A.R., Rodriguez, M., Fernandes, M. and Briones, F.
17-Q-07 Magneto-Optic Kerr Effects in Fe-Ni Alloys
Maeda, T., Takeda, K., Saito, S. and Soumura, T.
17-Q-08 Magneto-Optical Effect in Fe-Ni, Ni-Co and Fe-Co Binary Alloy Films
Sato, T., Shimatsu, T., Miyahara, T. and Miyazaki, T.
17-Q-09 The Reason of Large Enhancement of Kerr Rotation in MnBiAl Thin Film
Lu, Q.Y., Chen, Y., Luo, C.P. and Wang, Y.J.
17-Q-10 Figure of Merit of the Magneto-Optic Kerr Effect under Plasma or Fabry-Perot Resonance
Suzuki, Y., Katayama, T., Koshizuka, N., Okuda, T. and Nishihara, Y.

17-R RE-TM & OTHER MATERIALS I1 (POSTER SESSION)

17-R-01 Preparation of TbFeCo/Al Bilayered Films for High Density Magneto-Optical Recording
Song, K., Ito, *H.* and Naoe, M.
17-R-02 Magneto-Optical Media with High Kerr Rotation at Short Wavelengths
Iiyori, H. and Takayama, S.
17-R-03 Magnetic and Magneto-Optic Properties of TbFeCoIn Amorphous Films
Zheng, G.G., Iijima, T. and Rao, K.V.
17-R-04 A Study on the Magnetic Anisotropy of the RE-TM Thin-Film Alloys
Kim. S.-O., Kim, M.-H., Kim, K.-S. and Yu, S.-C.
17-R-05 Magnetic Anisotropy of Amorphous Tb-Gd-Fe Alloy Films Prepared by UHV Flash Evaporation
Kaneko, K., Takeno, Y. and Goto, K.
17-R-06 Magneto-Optical Kesr Effect in R2Fe14-,Mn,B (R=Nd, Er)
Iida, T., Fukuzawa, T., Saito, T., Shinagawa, K. and Tsushima, T.
17-R-07 Optical Computing Using FA Colour Centres
Peiponen, K.-E.

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18-I DIRECT OVERWRITE I & DOMAIN DYNAMICS

18-I-01 Direct Overwrite Technology Using Exchange-Coupled Multilayers (Invited)
Fukami, T. and Tsutsumi, K.

18-I-02 Dynamics of Magnetization Reversal in Amorphous Films of Rare Earth-Transition Metal Alloys (Invited)
Mansuripur, M. and Giles, R.

18-I-03 Computer Simulation of Direct Overwrite Scheme in the Exchange-Coupled Bilayer for Magneto-Optical Memory
Hasegawa, M., Moroga, K., Okada, M., Okada, O. and Hidaka, Y.

18-I-04 Design of the Intermediate Layer in the Overwritable Magnetic Triple Layer Disk
Muto, Y., Shimouma, T., Nakaoki, A., Suzuki, K. and Kaneko, M.

18-I-05 Direct Overwrite by the Leakage Field Modulation of Thermo-Magnetic Biasing Layer
Ichihara, K., Ashida, S., Kikitsu, A. and Mizusawa, Y.

18-I-06 Read out Mechanism of Magnetically Induced Super Resolution
Ohta, M., Fukumoto, **A.,** Aratani, K., Kaneko, M. and Watanabe, K.

18-J DISK STRUCTURE & RELIABILITY I

18-J-01 Kinetics of Corrosion Defect Growth in MO Media (Invited)
Funkenbusch, A., Rappe, R. and Murray, W.

18-J-02 Optimum Design of Magneto-Optical Disk Structure (Invited)
Ohta, K.

18-J-03 Advancements in Reliability Testing of Magneto-Optic Systems
Murray, W.P.

18-J-04 Optical and Magneto-Optical Performance of Optimized Disk Structures
McDaniel, T.W., McGahan, W.A. and Woollam, J.A.

18-J-05 High Density Recording on Pt/Co MO Disk Using Blue Laser
Sumi, S., Tanase, K., Fuchigami, Y., Torazawa, K., Tsunashima, S. and Uchiyama, S.

18-J-06 Pit Shape Formation and Stability in Amorphous TbFe Films
Pokhil, T.G., Vvedensky, B.S. and Nikolaev, E.N.

18-K STORAGE TECHNOLOGY

18-K-01 Towards the Multitrack Digital Video Tape Recorder (Invited)
Maurice, F.

18-K-02 High Speed / High Density Recording Using Magneto-Optical Disks
Sukeda, H., Tsuchinaga, H., Tanaka, S., Niihara, T., Nakamura, S., Mita, S., Yamada, Y., Ohta, N. and Fukushima, M.

18-K-03 Magnetic Capping Layer Effect of PtCo Alloy Film Coupled with TbFeCo
Ohnuki, S., Shimazaki, K., Ohta, N. and Fujiwara, H.

18-K-04 The Foundation for Your Memory (Invited)
Barnes, J.G., Bradshaw, J.M. and Molyneux, I.

18-K-05 Deflection of One Side Recordable Magneto-Optical Disks with Polycarbonate Substrates Induced by Humidity Changes

Kurosawa, F. and Katuda, S.

18-S RECORDING CHARACTERISTICS (POSTER SESSION)

18-S-01 High-Density Flattened Magneto-Optical Disks with Narrow Track Pitch
Taki, K., Matsuda, R., Ohashi, Y., Hamaguchi, T. and Maruyama, H.

18-S-02 Nanosecond Recording in TbFe Films
Gadetsky, S.N., Nikolaev, E.N. and Zumkin, M.V.

18-S-03 Highly Power Sensitive and Field Sensitive MO Disk for 8 MB/s Data Transfer
Yamada, Y., Yoshihiro, M., Ohta, N., Sukeda, H., Niihara, T. and Fujiwara, H.

18-S-04 Magneto-Optical Recording Properties of SmCoDy Amorphous Films with Perpendicular Magnetic Anisotropy
Lee, Z.Y., Miao, X.S., Zhu, P., Hu, Y.S., Lin, G.Q. and Wan, D.F.

18-S-05 DyFeCo Magneto-Optical Disks with Ce-Si02 Protective Film
Maeda, M., Naito, K., Numata, T., Nakashima, K. and Koshino, N.

18-S-06 Effect of SIN, Layer on the Thermal Behavior of Magneto-Optical Disk with Quadri-Layer Structure
Lee, J.-G., Cho, Y .-G. and Yang, C.-S.

18-S-07 Figure of Merit for Quadrilayer MO Media
Kobayashi, M., Saegusa, N., Takano, S., Matsumoto, K., Sumide, M. and Niimura, Y.

18-S-08 A Sony M-O Drive Based Data Acquisition and Storage Prototype System
Chiang, T.T.

18-S-09 High Performance Magneto-Optical Recording Media
Wan, D.F., Lee, Z.Y., Miao, X.S., Lin, G.Q. and Lee, X.Y

18-S-10 Noises Control and Analysis in Measuring Domain Size
Lee, Z.-Y., Zhu, P., Xia, W.J., Hu, Y.S., Chen, S.B. and Miao. X.S.

18-T DIRECT OVERWRITE II, PROCESS, RELIABILITY II (POSTER SESSION)

18-T-01 Expansion of Overwriting Power Margin in the Magnetic Field Modulation Method
Miyatake, N., Hino, Y., Birukawa, M. and Kawabata, H.

18-T-02 Magneto-Optical Recording with Optical and Magnetic Field Modulation Methods
Murakami, Y., Takahashi, A., Ohta, K. and Ishikawa, T.

18-T-03 The Overwritable Magneto Optical Disk with High Repeatability by Light Intensity Modulation Method
Tanaka, S., Shimouma, T., Nakaoki, A., Aratani, K. and Kaneko, M.

18-T-04 Overwrite Process Control in Exchange Coupled Trilayer MO Media by NdFeCo Control Layer
Hayashi, K. and Okada, 0 .

18-T-05 Relationship between Laser Power Margin and Thermal Stability of Overwritable Exchange-Coupled MO-Media
Miyamoto, M., Miyamoto, H., Niihara, T., Ando, K. and Ojima. M.

18-T-06 Stabilization of Recorded Domains on Light Power Modulated Magneto-Optical Disk with Exchange-Coupled Films
Miyamoto, H., Miyamoto, M., Ando, K., Niihata, T. and Ojima. M.

18-T-07 Corrosion Defect Characterization and Mapping on Plastic Substrate MO Disk
Shimazaki, K., Furusho, H., Goto, T., Kuwahara, K., Kikuchi, N., Iida, T. and Ohta, N.

18-T-08 High Corrosion-Resistant Al Alloy Reflective Films with Low Thermal Conductivity for Magneto-Optical Disks
Onishi, T., Yoshikawa, K. and Ito, T.

18-T-09 Single Disk Processes for the Production of 3.5" and 5.25" Magnetooptical Recording Media

Brauer, G., Dicken, W. and Reineck, S.

18-T-10 Influence of Target and Process Parameters on TbFeCo Thin Films Produced by Dynamic and Static Sputter Deposition
Brauer, G., Dicken, W., Wirz, P., Jonsson, S., Schlott, M. and Schittny, St.

18-T-11 Surface Topographical Effect of a Cast Magnetron Sputtering Target on the Composition of TbFeCo Magneto-Optic Thin Films
Han, S.H., Park, J.C., Lee, S.K., Kim, S.G.* and Kim, S.J.

18-U MULTI-LAYERS II (POSTER SESSION)

18-U-01 Effect of Substrate Heating on Perpendicular Anisotropy in Co/Pt Multilayered Films
Shiomi, S., Miyauchi, T., Masuda, M. and Yahagi, S.

18-U-02 Optical Model of Co/Pt Multilayered Film
Nakajima, J., Takahashi, A., Ohta, K. and Ishikawa, T.

18-U-03 Annealing Effects on the Crystallographic and Magnetic Properties of Co/Pt Multilayers
Honda, S., Morita, N., Nawate, M. and Kusuda, T.

18-U-04 (Pt/Co)/(TbFeCo) Double Layered Film for Shorter Wavelength Laser Recording
Takahashi, M., Nakamura, J., Niihara, T. and Tatsuno, K.

18-U-05 Magneto-Optical Properties of Pt/MnSb Multilayered Film with Perpendicular Magnetic Anisotropy
Kawanabe, T. and Naoe, M.

18-U-06 Layer-by-Layer Determination of Compensation Temperatures of TbFe Layers in TbFe/SiO Compositionally Modulated Films
Saito, N., Kawamura, N. and Nomura, T.

18-U-07 Crystlline Ferrimagnet-Spinglass-Amorphous Ferrimagnet Phase Transition in Tb/Fe Multilayers
Honda, S., Kimura, T., Nawate, M. and Kusuda, T.

18-U-08 Magneto-Optical Properties in Bilayer and Trilayer Thin Films
Zhai, H.R., Lu, M., Miao, Y.Z., Xu, Y.B., Zhou, S.M., Wang, H., Gu, B.X. and Zhang, S.L.

CLOSING ADDRESS
Imamura, N.