MORIS2004
Technical Program

Sunday, May 16, 2004

T1 Magnetic Reversal Mechanisms and Simulations Thereof
J. Miltat
T2 Current Induced Domain Wall Motion in Magnetic Nanowires
Stuart S.P. Parkin
T3 Evolution of HDD Technologies and New Applications
S. Kaneko

Monday, May 17, 2004

Opening Remarks
A. Itoh

KEY NOTES

Mo-K- 1 Tunnel Spin Injectors for Semiconductor Spintronics
Stuart S.P. Parkin
Mo-K- 2 Recent Research Activity Toward Future Data Storage
T. E. Schlesinger

APPLICATIONS & COMPONENTS

Mo-A-1 Researches for Higher Capacity MD Systems
K. Fujiie
Mo-A-2 MO Applications and Market Outlook
K. Ogawa
Mo-A-3 Small Optical Flying Head Technologies Interfaced with Plastic Disks
S. Kim S.-D. Jung, M. A. Chung, S.-J. Yoon, D.-H. Choi
Mo-A-4 Design and Analysis of A Suspension for OFH in Small Form Factor ODD
E.-J. Hong, W.-S. Oh, N.-C. Park, H.-S. Yang, Y .-P. Park

SESSION P HIGH DENSITY RECORDING & MAGNETO-OPTICAL DEVICES

Mo-P- 1 HAMR and Mechanical Stability of its Head-Disk Interface
H. Li, B. Liu, T.-C. Chong
Mo-P-2 Effect of Thin Al Underlayer in Amorphous Magnetic Recording Media
J. Sato, K. Takayama, S. Miyanishi, H. Fuji, Y. Murakami, K. Kojima, A. Takahashi
Mo-P-3 Simulations for MO Recording Processes with Crescent Shaped Marks
A. Tsukamoto, K. Nakagawa, A. Itoh, T. Uchiyama, N. Ohota
Mo-P-4 Tiny Marks Recording on Magneto-Optical Medium with Micro-Columnar Structure
M. Murakami, M. Birukawa
Mo-P-5 Wall Structure and Energy on DWDD
A. Ohshima, K. Kusano, T. Kobayashi, Y. Fujiwara, S. Shiomi, M. Kaneko
Mo-P-6 Simulation of Readout Process for Magnetic Domain Expansion Media

S. Hamaguchi, T. Kamimura, K. Tamanoi, K. Matsumoto, K. Ozaki

Mo-P-7 Test Read Method Using As-Depo MAMMOS Media
S. Imai, H. Ido, M. Tani, O. Ishizaki, H. Awano, N. Ota

Mo-P-8 Temperature-Dependent Magnetic Properties of Fe-Pt Nanoparticles
H. Sakuma, T. Taniyama, H. Nishio, Y. Kitamoto, Y. Yamazaki, H. Yamamoto

Mo-P-9 Magneto-Optic and Magnetic Properties of DySmCo/Cr Thin Films
Z. Y. Li, F. Jin, Z. X. Huang, X. Dan, Z. Li, X. H. Xu, X. M. Cheng, G. Q. Lin

Mo-P-10 A Metal Inprinting Technique onto Polymer
J. Hieda, N. Saito, 0 . Takai

Mo-P- 11 The Light Propagation Analysis of Multilayered Media for Three Dimensional Optical Memory
M. Nakano, Y. Kawata

Mo-P- 12 Study of Material for Hologram Volumetric Recording
A. Nakanishi, P. B. Lim, K. Kashiwagi, K. Okamoto, K. Nishimura, H. Uchida, M. Inoue

Mo-P- 13 Characterization of Permalloy Wires by Optical and Magneto-Optical Scatterometry
R. Antos, J. Mistrik, M. Aoyama. T. Yamaguchi, S. Visnovsky, B. Hillebrands

Mo-P- 14 Fabrication of Voltage-Driven Magneto Optic Spatial Light Modulator
H. Takagi, J. H. Park, M. Mizoguchi, K. Nishimura, H. Uchida, M. Lebedev, J. Akedo, M. Inoue

Mo-P- 15 A Theoretical Study of One-Dimensional Magneto-Photonic Crystals
T. Hamon, S. Buil, N. Keller. P. Dahoo

Mo-P- 16 Behavior of Large Faraday Rotation in Magnetophotonic Crystals with Single-Cavity Structures
H. Kato, T. Matsushita, A. Takayama, M. Egawa, K. Nishimura, M. Inoue

Mo-P- 17 Optical Properties of Three-Dimensional Magnetophotonic Crystals Based on Artificial Opals
A. V. Baryshev, T. Kodama, K. Nishimura, H. Uchida, M. Inoue

Mo-P- 18 Enhancement of Magneto-Optical Effects in Novel Garnet-Beased Magnetophotonic Crystals
D. Kobayashi, K. Nishimura, H. Uchida, A. A. Fedyanin, O. A. Aktsipetrov, M. .Inoue

Mo-P- 19 Coating of Magnetite on SiO_2 Spheres for Three-Dimensional Magneto-Photonic Crystal
T. Kodama, K. Nishimura, A. V. Baryshev, H. Uchida, M. Inoue

Mo-P- 20 Fabrication of Two-Dimensional Magnetophotonic Crystals
Y. Ikezawa, A. Tsuzuki, K. Nishimura, H. Uchida, M. Inoue

Mo-PP- 1 Miniaturized Integrated Optical Pickup for MD
M. Ogawa, T. Ueyama, T. Miyake. T. Numata, K. Hirano, K. Minami. Y. Nakata, Y. Kurata

Mo-PP-2 An Effective-Field Approach for Determination of Short-Wavelength MAMMOS Readout Margins
M. K. Loze, C. D. Wright

Mo-PP-3 Comparison of Transfer Ratios of Magnetic Tunnel Transistors
Y. Fujiwara. T. Hirose, H. Omae. H. Nakanishi, M. Jirnbo, T. Kobayashi, S. Shiomi

Mo-PP-4 Enhancement of Magneto-Optical Kerr Rotation
T. Kato, S. Kazuhiro, M. Fujimoto, H. Oike. H. Sakurai, F. Itoh

Mo-PP-5 The Effect of FePt Thickness on Magneto-Optical Properties of Si_3N_4/FePt/Si_3N_4/Al Structure
H. Ryu, D. Suh. Y. Park, M. C. Paek

MAGNETO-OPTICAL EFFECTS

Mo-B-1 Magneto-Optics of Prussian Blue Analogs
K. Hashimoto , S. Ohkoshi

Mo-B-2 Angle-Resolved Soft X-Ray Magnetic Circular Dichroism in Two-Dimensional Nanoscale Magnets
T. Koide, H. Miyauchi, J. Okamoto, T. Shidara, K. Mamiya, A. Fujimori, T. Katayama, S. Yuasa, Y. Suzuki

Mo-B-3 The Incident Angle Dependence of XAS and MCD at The Tb $M_{4,5}$-Edges of $Tb_{17}Co_{83}$ Thin Film
M. Mizumaki, A. Agui, T. Asahi, K. Matsumoto, J. Sayama, T. Morikawa, T. Nakatani, T. Matsushita, T. Osaka, Y. Miura

Mo-B-4 Nonlinear-Optical Properties of Thin $La_{0.7}Ca_{0.3}MnO_3$ Films and Dynamics of Photoinduced Phase Transition
E. Mishina, T. Tamura, S. Nakabayashi, V. Moshnyaga, K. Samwer, L. Kulyuk, Th. Rasing
Mo-B-5 Vectorial Magnetization Measurements by Kerr Effect
J. Hamrle, T. Kimura, Y. Otani
Mo-B-6 Novel Magneto-Optical Microscope Using Polarization Modulation Technique
T. Ishibashi, Z. Kuang, Y. Konishi, K. Akahane, X. R. Zhao, T. Hasegawa, K. Sato

Session S Hybrid Recording (Topical Night Session)
Mo-S-1 Prospects of Hybrid Recording Materials
N. Ota, N. Inaba
Mo-S-2 Fundamentals and Feasibility of Hybrid Recording
T. E. Schlesinger, E. Black, W. Guo, L. Zhou, A. Itagi, D. Stancil, J. A. Bain
Mo-S-3 Micromagnetic Simulations of Heat-Assisted Magnetic Recording
T. W. McDaniel
Mo-S-4 Thermally Assisted Magnetic Recording on Longitudinal Synthetic Ferrimagnetic Media
K. Matsumoto, J. Taguchi, A. Inomata. A. Ajan. W. Yamagishi
Mo-S-5 Thermodynamic and Thermoelastic Aspects of Heat Assisted Magnetic Recording
J. Hohlfeld, P. M. Jones, B. Lu, G. Ju. Y. -T. Hsia. S. Batra, R. E. Rottmayer, D. Weller
Mo-S-6 Surface Plasmon Enhancement Effect and its Application To Near-Field Optical Recording
J. Fujikata, T. Ishi, H. Yokota, K. Kato, M. Yanagisawa, K. Ohashi, T. Thio, R. Linke

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NANO-FABRICATIONS

Tu-C- 1 EB Mastering Process for SIL Readout System
M. Furuki, M. Takeda, M. Yamamoto, M. Shinoda, K. Saito, Y. Aki, H. Kawase, M. Koizumi, T. Miyokawa, M. Muto
Tu-C-2 Patterned Magnetic Media for Ultra-High Density Storage
M. Albrecht, C. T. Rettner, A. Moser, B. D. Terris
Tu-C-3 Formation of Ultra High Density Ferromagnetic Column Arrays Beyond 1 Tera Bit/inch^2 by Porous Alumina Template
S. Shingubara, T. Shimizu, M. Nagayanagi, O. Yaegashi, G. R. Wu, T. Takahagi
Tu-C-4 3D Mold Fabrication Techniques Ushing Inorganic Resist
J. Taniguchi, Y. Taguchi, Y. Sugiyama, S. Ono, I. Miyamoto

MAGNETO-OPTICAL DEVICES

Tu-D-1 Variable Magneto-Optical Devices for Fiber-Optic Communication Systems
H. Umezawa
Tu-D-2 Very Fast Optical Switch with Yttrium Orthoferrite
Y. Didosyan, H. Hauser. G. Reider
Tu-D-3 Magneto-Optic Spatial Light Modulators for Use in Holographic Data Storage and Three-Dimensional Display
M. Inoue, J. H. Park, H. Takagi, H. Uchida, K. Nishimura
Tu-D-4 Highly Efficient (Cd,Mn)Te Waveguide for Integrated Magneto-Optical Isolator
M. C. Debnath, V. Zayets, K. Ando

ULTRA HIGH BENSIQY MEMOW

Tu-E- 1 Three Dimensional Nano Patterned Media for High Density Optical Data Storage
Y. Kawata, M. Nakano
Tu-E-2 Thermomechanical Storage Using Arrayed Cantilever Probes
H. Rothuizen, G. Cherubini. M. Despont, U. Drechsler. E. Eleftheriou, W. Haberle, M. A. Lantz, A. Pantazi, H. Pozidis, D. Wiesmann
Tu-E-3 Nano-Fabrication Gap Optical Probe Using Vcsel for High Density and High Data Rate in Optical Disk
K. Goto, Y. Masuda, T. Teshima

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HIGH DENSITY RECORDING MATERIALS

We-F-1 FePt and Oxide Coated FePt Nanoparticles
M. Chen, H. Zeng, J. P. Liu';:, S. Sun
We-F-2 Depositing Chemically Synthesized FePt Nanoparticles and Preventing Their Coalescence
H. Kodama, S. Momose, T. Uzumaki, A. Tanaka
We-F-3 Magnetic Properties of FePt (001) Films with a Variety of Buffer Layers Grown at Reduced Temperature
T. Seki, T. Shima, K. Takanashi, Y. Takahashi, E. Matsubara, Y. K. Takahashi, K. Hono
We-F-4 High Density Perpendicular Magnetic Recording Media of Granular-Type FePt/MgO/FeTaC Double Layers
Z. Zhang, T. Suzuki, J. Yin

SPIN DYNAMICS & NANO-OBSERVATIONS

We-G-1 Combined Magnetic Force Microscopy and Magnetoresistance Measurements for Studying Mesoscopic Ferromagnetism
D. Buntinx, S. Brems, A. Volodin, C. Van Haesendonck
We-G-2 Laser-Induced Precessional Magnetization Dynamics in Magneto-Optical Materials
A. Kirilyuk
We-G-3 Scanning Hall Probe Microscopy: Quantitative & Non-Invasive Imaging and Magnetometry of Magnetic Materials at 50nm scale
A. Oral
We-G-4 Ultrafast Spin Re-Orientation in Antiferromagnets : New Possibilities in Magnetic Memory
A. V. Kimel, A. Kirilyuk, A. Tsvetkov. R. V. Pisarev, Th. Rasing

MAGNETISM & PHYSICS

We-Q-1 Coercivity Control of c-Axis Oriented FePt Thin Films Deposited on Glas Disks by Substrate Surface Pinning Sites
T. Kamiki, S. Nakagawa
We-Q-2 Optical and Magneto-Optical Properties of Magnetic FePt-SiO_2 Nanocomposites
K. Aimuta, E. Gan'shina, A.Granovsky, M. Kochneva, P. Tsherbak, M. Vashuk, K. Nishimura, H. Uchida, M. Inoue
We-Q-3 Magnetic Characteristics of TbFeCo Fabricated on Isolated FePt Thin Film
Y. Itoh, A. Tsukamoto, K. Nakagawa. A. Itoh
We-Q-4 Magnetic and Magneto-Optical Properties of $(FeCoNi)_3Pt$ Alloy Thin Films
M. A. I. Nahid, T. Suzuki

We-Q-5 Magnetic and Magneto-Optical Properties of FeRh Thin Films
A. Perumal, T. Suzuki
We-Q-6 Perpendicular Magnetic Anisotropy and Kerr Spectra of $(Cr_{1-x}V_x)Pt_3$ Ordered Alloy Films
T. Kato, N. Uno, S. Tsunashima, S. Iwata
We-Q-7 Nano Chemical Conversion Toward Nano-Memory
S. Lee, N. Saito, O. Takai
We-Q-8 Dynamic Observation of Domain Shrinking Speed Over Walker'S Limit
F. Izawa, S. Ozawa, A. Tsukamoto, K. Nakagawa, A. Itoh
We-Q-9 Nano-Particles Fabrication of FePt and Fe by Ion Beam Induced CVD
Q. Y. Xu, Y. Kageyama, T. Suzuki
We-Q-10 Fabrication and Magnetic Characterization of Embedded Permalloy Structures
T. Tezuka, T. Yamamoto, K. Machida, S. Shimizu, T. Ishibashi, Y. Morishita, A. Kokitu, K. Sato
We-Q-11 Room-Temperature Ferromagnetism in Epitaxial Ge (Fe,Mn) Diluted Magnetic Semiconductor
R. R. Gareev, H. Braak, Yu. V. Bugoslavsky, D. E. Burgler, P. A. Grunberg. C. M. Schneider
We-Q-12 Magneto-Optic Polar and Longitudinal Kerr Spectra in Ultrathin Fe/Au/Fe and Ag/Fe/Ag Systems
J. Grondilova, M. Veis, M. Rickart, S. Visnovsky, S. O. Demokritov, B. Hillebrands
We-Q-13 Theoretical Analysis of Critical Domain Size for Quadri-Value Recording Media
K. Nakagawa, T. Fujii, A. Itoh
We-Q-14 Magnetization Reversal Beyond The Curie Temperature Considering The Curie-Weiss Law
S. Imai, M. Tani, H. Ido, H. Awano, N. Inaba, N. Ota
We-Q-15 Magnetization Reversal of Co Films on Self-Assembled Ag(100) Islands
D. H. Wei, C. C. Yu, S. C. Chou, Y. D. Yao, Y. Liou, T. S. Chin
We-Q-16 Ultrafast Magneto-Optics of (Ga,Mn)As : A New Paradigm for High Density Recording?
A. V. Kimel, G. V. Astakhov, G. M. Schott, A. Kirilyuk, D. R. Yakovlev, G. Karczewski, W. Ossau, G. Schmidt, L. W. Molenkamp, Th. Rasing
We-Q-17 Purely Magnetization-Induced Nonlinear Optical Effects
F. Hansteen, O. Hunderi, T. H. Johansen, A. Kirilyuk, Th. Rasing
We-Q-18 Temperature Dependent Faraday Rotation as a Probe of Tuned Magnetism in Off-Stoechiometric Yttrium Iron Garnet Thin Films
N. Keller, Y. Dumont, G. Friou, P. Rocher, P. R. Dahoo, P. Renaudin, M. Tessier, M. Guyot
We-Q-19 Magneto-Optical Spectra of Ordered and Disordered FePt Films Prepared at Low Temperature
K. Sato, A. Mizusawa, K. Ishida, T. Seki, T. Shima, K. Takanashi
We-Q-20 MOKE in Magnesium Fluoride/Iron Multilayers
K. Takano, H. Sakurai, H. Oike, F. Itoh
We-Q-21 Magnetic Interactions and The Delta M Method in Dot Arrays
V. Repain, J-P. Jamet, N. Vernier, M. Bauer. J. Ferre, C. Chappert, J. Gierak, D. Mailly
We-Q-22 Excitation of Coherent Spin Waves in GdFeCo Film
A. Tsukamoto, K. Nakagawa, A. Itoh, A. Kimel, A. Tsvetkov, H. Awano, N. Ohta, A. Kirilyuk, Th. Rasing
We-Q-23 Measurement of Kerr Effect Using Multi Sampling
L. Zuoyi, L. Zhen, T. Liguo, C. Xiaoming, J. Fang, H. Zhixin
We-Q-24 MCD Measurement at The Tb $M_{4,5}$-Edges of $Tb_{17}Fe_XCo_{(83-X)}$ Perpendicular Magnetization Films
A. Agui, M. Mizumaki, T. Asahi, J. Sayama, K. Matsumoto, T. Morikawa, T. Nakatani, T. Matsushita, T. Osaka, Y. Miura

POST-DEADLINE PAPER

We-QP-1 Direct Measurement of Interaction Field Distribution for Magneto-Optical Thin Films
T.-H. Wu, L.X. Ye, J.M. Lee, J.P. Su, J.C. Wu

Session H Magneto-Optical Recording

We-H-1 Double MAMMOS: 3-Dimensional MO Recording ---3D-MO National Project---
A. Itoh, N. Ohta, T. Uchiyama

We-H-2 Study of Side-Wall-Annealing for High Density Recording on a Track-Wobbled DWDD Disc
T. Miki, G. Fujita, T. Sakamoto, A. Kato, S. Imanishi, Y. Akiyama, Y. Tanaka

We-H-3 Quadri-Value MO Recording Layers for Double-MAMMOS Readout Method
K. Nakagawa, A. Itoh

We-H-4 Reduction of Magnetic Recording Field Using New Hw Assist Magnetic Layer for ZF MAMMOS
H. Awano, H. Ido, M. Tani, S. Imai, N. Ota

We-H-5 Simulation of Thermomagnetic Recording Process Using MFM Method: Effect of Field Gradient
T. Kato, M. Shimodaira, T. Koyama, S. Tsunashima, S. Iwata

CLOSING REMARKS
M. Kaneko