MORIS 2007 Program Schedule

September 24, Monday

8:15 **Opening remarks**
T. E, Schlesinger (Carnegie Mellon University) and K. Nakagawa (Nihon University)

HAMR I
Session Co-Chairs **T. C. Chong** (Date Storage Institute)
A.Itoh (Nihon Univ.)

8:30 **A1** **Challenges in Heat Assisted Magnetic Recording**
N, J. Gokemeijer, W. A, Challener, E, Gage, Y. T, Hsia, G Ju, D, Karns, L. Li, 8. Lu, K Pethos, C. Peng, R. E. Rottmayer, X, Yang, H, Zhou, T, Rausch, and M. A. Seigler (Seagate Tech.)

9:10 **A2** **Multilayer optical head using the butted grating structure for hybrid recording**
F. Tawa, S. Hasegawa, and W. Odajima (Fujitsu Lab. Ltd.)

9:50 **A3** **What is the smallest possible laser spot size in heat assisted magnetic ecording?**
E. Yablonovich (UC Berkeley)

10:30 Coffee break

MO Physics and Device 1
Session Co-Chairs **J. Hohlfeld** (Seagate Technology)
H. Lee (Carnegie Mellon University)

10:45 **A4** **Light induced magnetism in magnetic semiconductors**
H. Munekata (Tokyo Inst. Tech.)

11:25 **A5** **Magneto-optic spatial light modulators and application for collinear holography**
H. Umezawa[1], T. lmura[1], K Honma[1], K.Jwasaki[1], H. Horimai[2], H. Koga[2], P. B. Lim[3], M. Inoue[3] ([1]FDK Corp., [2]Optware Corp., [3]Toyohashi Univ. Tech.)

12:05 Lunch

Session Co-Chairs **M. Inoue** (Toyohashi Univ. Tech.)
M. Levy (Michigan Tech.)

13:30 **B1** **Metamaterials: Magnetism enters Photonics**
M. Wegener (Univ. Karlsruhe)

Fast Reversal
Session Co-Chairs **M. Inoue** (Toyohashi Univ. Tech.)
M. Levy (Michigan Tech.)

14:10 **B2** **Controlling and switching magnetism by light on femtosecond time-scales**
Th. Rasing (Radboud Univ. Nijmegen)

14:50 Coffee break

15:05 **B3** **Atomistic and macro spin models of ultrafast reversal**
D. Hinzke[1], N. Kazantseva[1], U. Nowak[1], R. Chantrell[1], and O. Chubykalo-Fesenko[2] ([1]Univ. York, [2]Institute de Qencia de Materials de Madrid)

15:45 **B4** **All-optical magnetic recording with circularly polarized light**
C. D, Stanciu[1], F. Hansteen[1], A. V, Kimel[1], A. Kinlyuk[1], A Tukamoto[2], A. Ito[2] and Th. Rasing[1] ([1]Radboud Univ. Nijmegen, [2]Nihon Univ.)

16:25 **B5** **Collective precessional modes in arrays of magnetic nano-elements**
V. V, Kruglyak[1], P, S. Keatley[1], A. Neudert[1], R. J, Hicken[1], J. R, Childress[2], J. A. Kafine[2] ([1]Univ. Exeter, [2]Hitachi Global Storage Tech.)

Poster Session 1 17:05-19:00
Session Co-Chairs **W. Challener** (Seagate)
J. Zhu (Carnegie Mellon University)

Posters of oral presentations: A1-A5, B1-B5, F1-F5

PA1 **Producing patterned perpendicular recording media by localized probe Processing**
M. L. Wears, D M. Newman, C. D. Wright. M. Aziz, L, Wang, and D, Choo

PA2 **Toward 10TB cartridge capacity using thermally assisted magnetic recording on ultra thin disc**
M. Tani

PA3 **Novel TAMR head using focusing waveguide**
N. Nishida, H. Hatano, K. Sekine, K. Konno, M. Saka, and H. Ueda

PA4 **Optical and thermal analysis of nano-patterned medium structure for near-field optical memory by using FDTD method**
H. Fukuda, T. Yamaguchi, J. Takahashi, and K, Yokomori

PA5 **Near-field optical flying head with a triangular aperture**
M. Hirata, M. Park, M. Oumi, K. Nakajima, and T. Ohkubo

PA6 **Mode index lens for light concentration in heat assisted magnetic recording**
L. Zhou, T.E. Schlesinger, J .A. Bain

PA7 **Toward technologies based on the magnetic manipulation of surface plasmons**
D. M. Newman, M. L. Wears, and R. J. Matelon

PA8 **Characteristics of MPC-based MOSLMs for sptial light modulators**
K. H. Chung, J Heo, K. Takahashi, S. Mito, H. Takagi, P.B. Lim, M. Inoue

PA9 **Fabrication of reflection 1D-MPC with DylG film for magneto-optic spatial light phase modulators**
S, Mito, K. Takahashi, F. Kwanishi, K, H. Chung, H. Takagi, J. Kim, P. B. Lim, and M. Inoue

PA10 **Current-perpendicular-to-plane spin valve with transparent top lectrode for magneto-optical observation of spin transfer switching**
K, I. Aoshima, N. Funabashi, K, Machida, Y. Miyamoto, N. Kawamura, K. Kuga, N. Shimidzu, F. Sato, T. Kimura, and Y. Otani

PA11 **Spin-polarised current-induced instability in spin-valve with antiferromagnetic layer**
H, Gomonay, and V. Loktev

PA12 **Magnetization dynamics in GdFeCo films measured using a ultra short pulse fiber laser**
K, Nakazawa. T Kato. N, Nishizawa, S Tsunashima, and S. Iwata

PA13 **All-optical writing and erasing of magnetic-domain pattern on a ferrite-garnet thin film**
A. Shevchenko, K. Lindfors. M. Korppi, and M. Kaivola, E. Ilyashenko and T,H. Johansen

PA14 **Magnetic resonance in nano-metamaterials at the near IR range; linear optical characterization of the "fishnet" structure**
E. Kim, W. Wu. Z Yu, E Ponizovskaya, A Bratkovsky. S Y Wang, and R. Shen

PA15 **Simulation for high frequency magnetization response of perpendicular double-layer media**
A Goto, and K. Shiiki

PA16 **Co antidot thin films deposited on nanoporous alumina templates**
C.T. Sousa, D.C. Leitao, J. Ventura, F. Carpinteiro, M.M. Amado, J.B. Sousa, and J.P. Araujo

PA17 **Research of the magnetic display system using two faces magnetic ball**
H. Won, G. S, Park, D. S. Kim. and D. G. Kim

PA18 **Influence of antenna and media materials on plasmon resonance for thermally assisted magnetic recording**
Y. Moriyama, S. Kudoh, J. Kim, K Nakagawa, and A. itoh

PA19 **FDTD analysis of near-field optical interaction between new HAMR media and head**
D.-S, Lim and Y.-J. Kim

PA20 **Fluorescent Dyes as Surface Plasmon Probes**
E. Black, J. Bain, T.E. Schlesinger

September 25, Tuesday

HAMR ll
Session Co-Chairs: **K. Nakagawa** (Nihon University)
B. Terris (HGST)

8:30 **C1** **HAMR write head with SIL**
N. Kojima (SONY Corp.)

9:10 **C2** **Introduction of near-field recording and heat assisted magnetic recording researches in C1SD**
N. C. Park, V. J. Kim, H. S. Yang. Y. P. Park, W. C. Kim, S, M, Kang, Y. J, Yoon, J. G. Kim and H. Choi (Yonsei Univ.)

9:50 **C3** **Fabrication and microstructure of L10 FePt media for HAMR**
J. S. Chen[1, 2], B. C. Lim[1], J, F. Hu[1], B, Liu[1] ([1]Data Storage Inst, [2]Nat'l. Univ. Singapore)

10:30 Coffee break

Left-Handed Materials ll
Session Co-Chairs: **T. E. Schlesinger** (Carnegie Mellon University)
T. Ishibashi (Nagaoka Univ. Tech.)

10:45 **C4** **Metamaterial and plasmonic structures: Towards next-generation materials, devices, and optical nanocircuits**
N Engheta (Univ. Pennsylvania)

11:25 **C5** **Superresolution and some other applications of left-handed materials**
A. Lagarkov (Inst. Theoretical Appl. Electromagn.)

12:05 Lunch

Magnetophotonic Crystals
Session Chairs: **A. Tsukamoto** (Nihon Univ.)
Th. Rasing (Radboud Univ. Nijmegen)

13:30 **D1** **Single domains and elliptical birefringence in planar Magnetophotonic crystals**
M. Levy, A, A. Jalali, X Huang (Michigan Tech, Univ.)

14:10 **D2** **All garnet magneto-optical photonic crystals**
A. Grishin (Royal Inst. Tech.)

14:50 Coffee break

15:05 **D3** **Giant nonlinear optical effects in magnetophotonic crystals: phase-matching and nonlinear Borrmann effect**
O. A. Aktsipetrov[1], M. Inoue[1, 2], and T V. Murzina[1] ([1]Moscow Slate Univ., [2]Toyohashi Univ. Tech.)

15:45 **D4** **Magneto-optical Kerr effect and wood's anomally in plasmon-assisted magnetophotonic crystals**
A. G, Zhdanov[1], A. A. Fedyanin[1], A. V Baryshev[2], A. B. Khanikaev[2], H. Uchida[2], M, Inoue[1'2] ([1]Moscow State Univ., [2]Toyohashi Univ. Tech.)

16:25 **D5** **Integration of $Bi_3Fe_5O_{12}$ garnets on non garnet substrates**
A Heinrich, T Korner, and B. Stritzker (Univ. Augsburg)

Poster Session ll **17:05-19:00**
Session Chairs: **J. S. Chen** (Data Storage Institute)
J. Bain (Carnegie Mellon University)

Posters of oral presentations: **C1-C5, D1-D5, E1-E5**

PB1 **Heat assisted magnetic recording media: L1 FePt and the impact of ternary addtions of Cu and Ni on the Curie temperature and the ordering transformation**
K. Barmak, and D C. Berry

PB2 **Decrease of the Curie temperature of FePt by Cu doping**
S. Iwase, Y. Sano, K. Okayama, N. Mori, H. Tanikawa. A. Tsukamoto, K. Nakagawa and A. Itoh

PB3 **Fabrication of patterned media for hybrid recording by block copolymer lithography**
H Hieda, A. Kitstsu, T. Koda, T, Maeda, Y. Yanagita, N. Kihara, and K. Naito

PB4 **Proposal and design of new HAMR media using surface Plasmon enhancement**
D.-S. Lim and Y.-J. Kim

PB5 **High temperature ferromagnetism in Co doped La_2O_3 material**
Q.-Y. Wen. Y.-Q. Song, Q.-H. Yang, and H.-W. Zhang

PB6 **Magneto-optical properties of nanometer crystal giant magneto-optical BiAlDylG thin film materials post-treated by rapid recurrent thermal annealing (RRTA) method**
Yang Qing-hui, Zhang Huai-wu. Liu Ying-ii, and Wen Qiye

PB7 **Magnetic micro and nano nonlinear oscillators with applications to the dynamic detection of a single baterium and to physical and chemical Sensing**
B. McNauqhton, R. Agayan, V. Sloica, R. Kopelman, and R. Clarke

PB8 **Interplay of anisotropy and gyrotropy in magnetophotonic crystal**
A. M. Merzlikin, A. P, Vinogradov, M. Inoue, and A. B. Granovsky

PB9 **Fabrication and real time characterization of highly anisotropic nano magnets**
J. R. Skuza, C. Clavero, R. A, Lukaszew, D. A, Walko, and R. Clarke

PB10 **Remarkable dielectric properties of nickel zinc ferrite synthesized via reverse micelle technique**
S. Thakur, S. C. Katyaf, and M. Singh

PB11 **Dynamic drift of stripe magnetic domains in ferrite-garnet single crystals**
L. A. Pamyatnykh, M. S. Lysov, and G. S. Kanaurova

PB12 **Evolution of magnetic properties of $Cu_{0.85}Mn_{0.15}$ByZn Substitution**
G. Rao, Y, D Yao. and J, W. Chen

PB13 **Bi:DyIG/PZT Composite films fabricated by Aerosol deposition method and their multiferroic properties**
S. Masaoka, T. Mano, H. Takagi, J. Kim, P. B. Lim, H. Uchida, and M, Inoue

PB14 **Theoretical analysis of voltage-driven MOSLM with 1D magnetophotonic crystal**
H. Takagi, K, Takahashi, S, Mito, F. Kawanishi, K.H.Chung, J. Heo, J. Kim, P.B Lim, and M. Inoue

PB15 **Magnetic garnet/alumina composite films for one-dimensional magnetophotonic crystals**
Y. Yamamoto, Y. Yamamoto. H. Takagi, J. Kim, P.B. Lim, H. Uchida, and M. Inoue

PB16 **Effect of particles size on magneto-optical properties of composites**
A. B. Khanikaev[1], A. V. Baryshev[1], A. B. Granovsky[1] and M. Inoue[2]

PB17 **Magneto-optical indicator garnet film grown by metal organic decomposition method**
T. Ishibashi, T. Kawata, T. Johansen, J. He, N. Harada, and K. Sato

PB18 **Magnetostatic surface wave propagation in tunable one dimensional magnonic crystal**
M. E. Dokukin. K. Togo, and M. Inoue

PB19 **A study on the nanowire phase structure for $Co_{1-x}Pt_x$ (0.09<x<09.86) using Rietveld refinement**
N, Wang, J Zhang, T.H. Shen

19:30-21:30 **Banquet**

September 28, Wednesday

HAMR lll
Session Chairs: **D. Stancil** (Carnegie Mellon Univ.)
N. C. Park (Yonsei University)

8:30 **E1** **Characterization of media for HAMR**
B. Knight, T.E. Schlesinger, and J. Bain (Carnegie Mellon Univ.)

9:10 **E2** **Near-field optical flying head with a triangular aperture**
M. Hirata[1], M. Park[1], M, Oumi[1], K. Nakajima[1] , and T. Ohkubo[2]
([1]Seiko Instruments Inc., [2]Univ. Tokyo)

9:50 Coffee break

10:45 **E4** **Approaches to enhance thermal stability of lubricant film for heat assisted magnetic recording media**
J. Zhang[1], J. W. Xu[2], J. K. P. Ng[2], R. Ji[1], H. X Yuan[1], B. X. Xu[1], E. S. Q. Tan[1], Q.D. Zhang[1], and F.Y. T. Liew[1] ([1]Data Storage Inst., [2]lnst. Mat. Res. Eng.)

11:25 **E5** **Thermally assisted magnetic recording on bit-patterned magnetic medium using near-field optical head with beaked metallic plate**
T. Matsumoto[1], K. Nakamura[1], T. Nishida[1], H. Hieda[2], A. Kikitsu[2], K. Naito[2], and T. Koda[3] ([1]Hitachi Ltd., [2]Toshiba Corp., [3]Hitachi Maxell Ltd.,)

12:05 Lunch

Left-Handed Materials lll
Session Chairs: **A. B. Granovski** (Moscow State Univ.)
K. Kikitsu (Toshiba Corp.)

13:30 **F1** **Metamagnetics with rainbow colors: Magnetism in visible spectral range**
V. Shalaev (Purdue Univ.)

MO Physics and Devices ll
Session Chairs: **L. Zhou** (Seagate Technology)
K. Barmak (Carnegie Mellon Univ.)

14:10 **F3** **Magnetorefractive effect in magnetic nanocomposites, manganites and magnetophotonic crystals**
A. B, Granovski[1] and M. Inoue[1, 2] ([1]Moscow State Univ., [2]Toyohashi Univ. of Tech.)

14:50 Coffee break

15:05 **F4** **Domain shape of CGC-like films with under layers of periodic isolated FePt particles**
F. Chino. A. Tsukamoto, and A. Itoh (Nihon Univ.)

15:45 **F5** **Microwave assisted magnetic recording**
J. Zhu, X. Zhu, and Y. Tang, (Carnegie Mellon University)

16:25 **Closing remarks**
T. E. Schlesinger (Carnegie Mellon Univ.)

16:35 **DSSC Tour**