

東北大学 電気通信研究所
研究室外部評価 参考資料
(2013年度-2018年度)

**Research Laboratory Reference Data
for External Review**

April 2013 - March 2019
(FY.2013-2018)

**Research Institute of Electrical Communication
Tohoku University**

情報ストレージシステム研究室
Information Storage Systems

1 Research Achievements

1.1 Refereed journal papers

[2013]

1 Simon John Greaves, Yasushi Kanai, and Hiroaki Muraoka, "Thermally assisted magnetic recording at 4 Tbit/in²," *IEEE Trans. Magn.*, Vol. 49, No. 6, pp.2665-2670, June 2013. [Invited]

2 H. T. Wang, M. R. Elidrissi, K. S. Chan, K. Eason, B. X. Xu, S. J. Greaves, Y. Kanai, H. Muraoka, "Optical Design of MAMR and HAMR by Applying Response Surface methodology," *IEEE Trans. Magn.*, Vol. 49, No. 6, pp. 2719-2722, June 2013.

3 松浦希望、三浦健司、村岡裕明、"高密度ビットパターン媒体記録のためのシールド型 MR ヘッドの再生分解能", *日本磁気学会誌*, Vol. 37, No. 3, pp. 49-55, 2013.

4 Simon John Greaves, Hiroaki Muraoka, "Effect of growth temperature on ordering of two-dimensional square spin ice," *J. Appl. Phys.*, Vol. 113, 17B517, 2013.

5 Yasuaki Nakamura, Jun Ueda, Yoshihiro Okamoto, Hisashi Osawa, Hiroaki Muraoka, "Nonbinary LDPC Coding System With Symbol-By-Symbol Turbo Equalizer for Shingled Magnetic Recording," *IEEE Trans. Magn.*, Vol. 49, No. 7, pp. 3791-3794, July 2013.

6 Kenji Miura, Hiroyuki Katada, Makoto Oguma, Yasutaka Nishida, and Hiroaki Muraoka, "Erase Band Noise and Generation Mechanism Due to an Adjacent Track," *IEEE Trans. Magn.*, Vol. 49, No. 7, pp. 3795-3798, July 2013.

7 Simon John Greaves, Yasushi Kanai, Hiroaki Muraoka, "High Frequency Recording With Shielded Planar Type Heads," *IEEE Trans. Magn.*, Vol. 49, No. 7, pp. 3806-3809, July 2013.

8 Masato Yamashita, Yoshihiro Okamoto, Yasuaki Nakamura, Hisashi Osawa, Hiroaki Muraoka, "Performance Evaluation of Neuro ITI Cnaceller for Two-Dimensional Magnetic Recording by Shingled Magnetic Recording," *IEEE Trans. Magn.*, Vol. 49, No. 7, pp. 3810-3813, July 2013.

9 Hirofumi Nobuhara, Yoshihiro Okamaoto, Yasuaki Nakamura, Kazuki Tkada, Masato Yamashita, Hisashi Osawa, Hiroaki Muraoka, "Infulence of Writing ITI Effects in Shingled Magnetic Recording," *IEEE Trans. Magn.*, Vol. 49, No. 7, pp. 3814-3817, July 2013.

10 Yasushi Kanai, Hidekazu Tamura, Kiyoshi Yamakawa, Kazuetsu Yoshida, Simon J. Greaves, Hiroaki Muraoka, "Micromagnetic Model Analysis of Planar-Type Write Head Field Response and Dependence on Pole Tip, Return Yoke, and Shield Structure," *IEEE Trans. Magn.*, Vol. 49, No. 9, pp. 4970-4976, September 2013.

[2014]

1 Moulay Rachid Elidrissi, Kheong Sann Chan, Simon Greaves, Yasushi Kanai, and Hiroaki Muraoka, "Skew Angle Effects in SMR System with double/triple reader head array," *J. Appl. Phys.*, 115, 17B753, May 2014

2 Akihiro Hara and Hiroaki Muraoka, "Jitter noise reduction by improving grain uniformity in granular media," *J. Appl. Phys.*, 115, 17B730, May 2014.

3 Simon John Greaves, Hiroaki Muraoka and Yasushi Kanai, "Analysis of unswitched grains in thermally assisted magnetic recording," *J. Appl. Phys.* 115, 17B708, 2014.

4 Hirofumi Nobuhara, Yoshihiro Okamoto, Masato Yamashita, Yasuaki Nakamura, Hisashi Osawa and Hiroaki Muraoka, "Influence of writing and reading intertrack interferences in terms of bit aspect ratio in shingled magnetic recording," *J. Appl. Phys.*, 115, 17B729, May 2014.

5 佐藤拓巳、中村隆喜、村岡裕明、「シーケンシャルアクセス転送速度を改善するアクセス局所性非依存型ハイブリッドストレージシステム方式の提案」, *電気学会論文誌 C*, Vol. 134, No. 11, 2014.

6 S. J. Greaves, "Domain wall pinning by antiferromagnets in magnetic nanowires", *IEEE Transactions on Magnetics* 50(11), 2302304-1-4, (2014).

7 S. J. Greaves, Y. Kanai and H. Muraoka, "Shingled thermally assisted magnetic recording for 8 Tbit/in²", *IEEE Transactions on Magnetics* 50(11), 3001204-1-4, (2014).

8 Y. Kanai, H. Tamura, Y. Yamakawa, K. Yoshida, S. J. Greaves and H. Muraoka, "Model analysis of magnetic write head for shingled thermally-assisted magnetic recording", IEEE Transactions on Magnetics 50(11), 3001404-1-4, (2014).

9 T. Katayama, Y. Kanai, K. Yoshida, S. J. Greaves and H. Muraoka, "Model analysis of oblique spin-torque oscillator with magnetic write head for shingled microwave-assisted magnetic recording", IEEE Transactions on Magnetics 50(11), 3001904-1-4, (2014).

[2015]

1 S. Greaves, T. Katayama, Y. Kanai, H. Muraoka, "The Dynamics of Microwave-Assisted Magnetic Recording," IEEE Trans. Magn., Vol. 51, No. 4, 3000107, April 2015. [Invited]

2 Takuto Katayama, Yasushi Kanai, Kazuetsu Yoshida, Simon Greaves, and Hiroaki Muraoka, "Micromagnetic model analysis of integrated single-pole-type head with tilted spin torque oscillator for high-frequency microwave-assisted magnetic recording," J. Appl. Phys., 117, 17C503 (2015).

3 Y. Kanai, K. Yoshida, S. J. Greaves and H. Muraoka, "Micromagnetic model analysis of high frequency heat-assisted magnetic recording," Journal of Applied Physics, 117, 17C506 (2015).

4 A. Hara and H. Muraoka, "Influence of Switching Field Distribution on the Transition Jitter in Grain-Position Controlled Granular Media," J. Magn. Soc. Jpn., Vol. 39, pp. 96-99, 2015.

5 T. Jin, H. Muraoka and S. J. Greaves, "Simple modeling of readback response based on granular micro-structure," J. Appl. Phys., 117, 17D114 (2015).

6 Akihiro Hara, Hiroaki Muraoka and S. J. Greaves, "Write synchronization for position-correlated granular media," J. Appl. Phys., 117, 17A909 (2015).

7 Simon John Greaves, Hiroaki Muraoka and Yasushi Kanai, "Modelling of heat assisted magnetic recording with the Landau-Lifshitz-Bloch equation and Brillouin functions," J. Appl. Phys. 117, 17C505 (2015).

8 Takaki Nakamura, Shinya Matsumoto, Hiroaki Muraoka, "Discreet Method to Match Safe Site-Pairs in Short Computation Time for Risk-Aware Data Replication," IEICE Trans. Info. Systems, Vol.E98-D, No. 8, pp. 1493-1502, 2014EDP7439, 2015.

9 Simon John Greaves, Yasushi Kanai, and Hiroaki Muraoka, "Microwave-Assisted Shingled Magnetic Recording," IEEE Trans. Magn., Vol. 51, No. 11, 3001204, Nov 2015.

10 R. Suzutou, Y. Nakamura, H. Osawa, Y. Okamoto, Y. Kanai, and H. Muraoka, "Performance Evaluation of TDMR R/W Channel with Head Skew by LDPC Coding and Iterative Decoding System," IEEE Trans. Magn., Vol. 51, No. 11, 3002004, Nov 2015.

11 Hiroaki Muraoka and Simon John Greaves, "Two-Track Reading with a Wide-Track Reader for Shingled Track Recording," IEEE Trans. Magn., Vol. 51, No. 11, 3002404, Nov 2015.

12 K. K. Teo, K. S. Chan, S. J. Greaves and Y. Kanai, "Areal density prediction for microwave assisted magnetic recording", IEEE Transactions on Magnetics 51(11), 7100904-1-4, (2015).

[2016]

1 Shinya Matsumoto, Takaki Nakamura, and Hiroaki Muraoka, "Redundancy-based Iterative Method to Select Multiple Safe Replication Sites for Risk-aware Data Replication," IEEE Transactions on Electrical and Electronic Engineering, Vol. 11, No.1, pp. 96-102, 2016.

2 Takaki Nakamura, Shinya Matsumoto, Masaru Tezuka, Satoru Izumi, and Hiroaki Muraoka, "Comparison of Distance Limiting Methods for Risk-aware Data Replication in Urban and Suburban Area," Journal of Information Processing, Vol. 24, No. 2, pp. 381-389, March 2016.

3 Simon J. Greaves, Yasushi Kanai, Hiroaki Muraoka, "Microwave-Assisted Magnetic Recording on Dual-Layer and Dual-Thickness Bit Patterned Media," IEEE Trans. Magn., Vol. 52, No. 7, 3000904, July 2016.

4 Simon J. Greaves, Yasushi Kanai, Hiroaki Muraoka, "Microwave-Assisted Magnetic Recording on Exchange Coupled Composite Media", IEEE Trans. Magn., Vol. 52, No. 7, 3001104, July 2016.

5 Yasushi Kanai, Takuto Katayama, Kazuetsu Yoshida, Simon Greaves, Hiroaki Muraoka, "Micromagnetic Simulation of Spin-Torque Oscillator for microwave-Assisted Magnetic Recording – Interaction Between Write Head and STO and Optimum Injected Current" IEEE Trans. Magn., Vol. 52, No. 7, 3001204, July 2016.

6 R. Suzuto, Y. Nakamura, H. Osawa, Y. Okamoto, Y. Kanai, H. Muraoka, "Effect of Reader Sensitivity Rotation in TDMR With Head Skew", IEEE Trans. Magn., Vol. 52, No. 7, 3001604, July 2016.

7 Naoki Akitaya, Simon John Greaves, Hiroaki Muraoka, "High-Frequency Magnetic Recording Using a Dual Write Head," IEEE Trans. Magn., Vol. 52, No. 7, 3100804, July 2016.

[2017]

1 松本慎也, 中村隆喜, 村岡裕明, 「リスクアウェア複製システムにおいて構成変更による再配置データ量を抑制する複製先部分再選択方式」, 情報処理学会論文誌, Vol. 58, No. 2, pp. 495-505, 2017.

2 Yasushi Kanai, Kazuetsu Yoshida, Simon Greaves, and Hiroaki Muraoka, "Micromagnetic Model Analysis of Spin-Transfer Torque Oscillator and Write Heads for Microwave-Assisted Magnetic Recording," IEEE Trans. Magn., Vol. 53, No. 2, 3000211, Feb 2017. (Invited)

3 Simon Greaves, Yasushi Kanai, and Hiroaki Muraoka, "Multiple Layer Microwave Assisted Magnetic Recording," IEEE Trans. Magn., Vol. 53, No. 2, 3000510, Feb. 2017. (Invited)

4 Yasushi Kanai, Ryo Itagaki, Simon J. Greaves, Hiroaki Muraoka, "Micromagnetic Model Analysis of Various Spin-Torque Oscillators with Write Head for Microwave-Assisted Magnetic Recording," IEEE Trans. Magn., Vol. 53, No. 11, 3001105, Nov., 2017

5 R. Suzutou, Y. Nakamura, M. Nishikawa, H. Osawa, Y. Okamoto, Y. Kanai, H. Muraoka, "A Study on Relationship Between Recording Pattern and Decoding Reliability in SMR," IEEE Trans. Magn., Vol. 53, No. 11, 3001204, Nov., 2017.

6 T. Kondoh, Y. Nakamura, M. Nishikawa, H. Osawa, Y. Okamoto, Y. Kanai, H. Muraoka, "A Study on Optimized BAR in Array Head Reading," IEEE Trans. Magn., Vol. 53, No. 11, 3001304, Nov., 2017.

7 S. J. Greaves, H. Muraoka and Y. Kanai, "Optimisation of applied field pulses for microwave assisted magnetic recording", AIP Advances 7, 056517-1-7, (2017).

8 N. Akitaya, S. Greaves and H. Muraoka, "Magnetization switching time of graded anisotropy recording media grains", T. Mag. Soc. Jpn. 1, p1-4, (2017).

9 S. Greaves, H. Muraoka and Y. Sonobe, "Composite media for heat assisted magnetic recording", IEEE Transactions on Magnetics 53(11), 8108804-1-4, (2017), doi 10.1109/TMAG.2017.2696561.

[2018]

1 Simon Greaves, Yasushi Kanai, and Hiroaki Muraoka, "Antiferromagnetically Coupled Media for Microwave-Assisted Magnetic Recording," IEEE Trans. Magn., Vol. 54, No. 2, 3000111, Feb 2018.

2 Luis Guillen, Satoru Izumi, Toru Abe, Hiroaki Muraoka, and Takuo Suganuma, "SDN-based Network Control Method for Distributed Storage Systems," Advances in Science, Technology and Engineering Systems Journal Vol. 3, No. 5, pp. 140-151, 2018.

3 Yasushi Kanai, Ryo Itagaki, Simon J. Greaves, and Hiroaki Muraoka, "Micromagnetic Model Analysis of Spin-Torque Oscillator (STO) Integrated Into Recording Head for Microwave-Assisted Magnetic Recording —Oscillation of STO Versus Rise Time of In-Gap Field," IEEE Trans. Magn., Vol. 54, No. 11, 3001005, DOI: 10.1109/TMAG.2018.2848279, Nov. 2018.

4 S. J. Greaves, H. Muraoka and Y. Kanai, "Magnetisation switching of ECC grains in microwave-assisted magnetic recording", AIP Advances 8, 056502-1-7, (2018), doi 10.1063/1.5006362.

5 T. Kikuchi, S. Greaves and H. Muraoka, "Effect of exchange coupling between top & bottom layers in dual layer microwave assisted magnetic recording", T. Mag. Soc. Jpn. 2, p1-4, (2018).

6 S. J. Greaves, T. Kikuchi, Y. Kanai and H. Muraoka, "Optimizing dual-layer recording using antiferromagnetic exchange coupling", IEEE Transactions on Magnetism 54(11), 3001805-1-5, (2018), doi 10.1109/TMAG.2018.2829509.

7 S. J. Greaves, "Magnetic recording using a spin torque oscillator", IEEE Transactions on Magnetism 54(11), 3001705-1-5, (2018), doi 10.1109/TMAG.2018.2834933.

1.2 Full papers in refereed conference proceedings equivalent to journal papers

None.

1.3 Papers in refereed conference proceedings

None.

1.4 Papers in conference proceedings

None.

1.5 Review articles

None.

1.6 Refereed proceedings in domestic conferences

None.

1.7 Proceedings in domestic conferences

1 T. Katayama, Y. Kanai, K. Yoshida, S. J. Greaves and H. Muraoka, "Simulation of spin-torque oscillator for microwave-assisted magnetic recording", 電子情報通信学会技術研究報告 MR2014-19, p33-38, (2014).

2 T. Jin, H. Muraoka and S. J. Greaves, "Simple modeling of readback response based on granular microstructure", 電子情報通信学会技術研究報告 MR2014-34, p, (2014).

3 N. Akitaya, S. J. Greaves and H. Muraoka, "Micromagnetic simulations of magnetisation reversal time", 電子情報通信学会技術研究報告 MR2016-5, p21-25, (2016).

4 K. Abe, Y. Tabuse, Y. Kanai, K. Yoshida, S. J. Greaves and H. Muraoka, "Simulation of STO for microwave-assisted magnetic recording (3) - optimum injected current of integrated STO", 電子情報通信学会技術研究報告 MR2016-11, p67-72, (2016).

5 Y. Tabuse, Y. Kanai, K. Yoshida, S. J. Greaves and H. Muraoka, "Micromagnetic simulation of STO for microwave-assisted magnetic recording (4) - optimum injected current density of integrated STO vs. write head structure and head material characteristics", 電子情報通信学会技術研究報告 MR2016-12, p73-78, (2016).

6 Y. Kanai, S. J. Greaves and H. Muraoka, "Micromagnetic model analysis of STO and recording head for microwave-assisted magnetic recording", 電子情報通信学会技術研究報告 MR2017-9, p59-64, (2017).

7 S. J. Greaves, Y. Kanai and H. Muraoka, "Magnetisation switching of ECC grains in microwave-assisted magnetic recording", 電子情報通信学会技術研究報告 MR2017-10, p65-70, (2017).

8 R. Itagaki, Y. Kanai, S. J. Greaves and H. Muraoka, "Micromagnetic analysis of MAMR recording head - Oscillation of small-sized STO with small external field", 電子情報通信学会技術研究報告 MR2017-20, p17-22, (2017).

9 S. J. Greaves, Y. Kanai and H. Muraoka, "A comparison of single phase and antiferromagnetically coupled media for microwave assisted magnetic recording", 電子情報通信学会技術研究報告 MR2017-22, p29-34, (2017).

10 S. J. Greaves and Y. Kanai, "Effect of STO angle in microwave assisted magnetic recording", 電子情報通信学会技術研究報告 MRIS2018-4, p19-24, (2018).

11 R. Itagaki, Y. Kanai, S. Greaves and H. Muraoka, "Micromagnetic analysis of MAMR recording head - tilted STO with narrow gap write head", 電子情報通信学会技術研究報告 MRIS2018-5, p25-30, (2018).

12 R. Itagaki, Y. Kanai, S. Greaves and H. Muraoka, "Micromagnetic analysis of MAMR recording head - STO with parallel gap write head and the influence of recording layers on STO oscillation", 電子情報通信学会技術研究報告 MRIS2018-25, p41-46, (2018).

1.8 Books

1 村岡裕明、「知識ベース 9群 電子材料・デバイス 1編 誘電体と磁性体 2章 磁性体 2-1 磁気記録・記憶」 電子情報通信学会 <http://member.ieice-hbkb.org/portal/> 2013(共著)

2 村岡裕明、「化学便覧 応用化学編 第7版 20.2.1 磁気記録概論 HDD概論」、丸善出版、2014年1月(共著)

3 村岡裕明、「電子情報通信学会 100年史(創立100周年記念出版)」第2部 電子情報通信技術100年の発展、第3章 大容量磁気メモリ 3.1 磁気記録, pp. 293-296、電子情報通信学会 2017年9月(共著)

4 S. J. Greaves: "Ultra-Fast Dynamics for Heat-Assisted Magnetic Recording", Handbook of Materials Modeling Volume 2: Applications: Current and Emerging Materials, editors W. Andreoni and S. Yip, Springer, Cham, 2018. doi 10.1007/978-3-319-50257-1_106-1, ISBN 978-3-319-50257-1 (Online).

1.9 Patents

None.

1.10 Invited talks

1 Hiroaki Muraoka, "Challenges for 10 Tbit/inch² recording with bit-patterned media," JSPS York-Tohoku Symposium on Magnetic Materials and Spintronic Devices, June 11, 2013. (York, UK) [Invited]

2 Simon Greaves, Yasushi Kanai, Takuto Katayama, Hiroaki Muraoka, "The dynamics of microwave assisted magnetic recording," The 25th Magnetic Recording Conference, TMRC 2014, A5, August 11, 2014. (Berkeley, U.S.A.) [Invited]

3 Hiroaki Muraoka, "Thermal Stability of Bit-Patterned Media," York-Tohoku-Kaiserslautern Symposium, June 11, 2015. (York, U.K.) [Invited]

4 Hiroaki Muraoka, "High Density Magnetic Storage: Big Data on Tiny Magnets," Annual Meeting of the Taiwan Association for Magnetic Technology, June 29, 2015 [Invited, Plenary]

5 Hiroaki Muraoka, "Thermal Stability of Bit Patterned Media," The 8th International Conference on Materials for Advanced Technologies of the Materials Research Society of Singapore, X6-4, July 1, 2015 (Singapore) [Invited].

6 村岡裕明、「巨大情報量と高密度ストレージの技術動向」,電子情報通信学会 2015年ソサエティ大会,CK-1. エレクトロニクスソサイエティプレナリーセッション,2015年9月9日 [プレナリー講演]

7 Hiroaki Muraoka; IEEE Magnetics Society Summer School Lecturer, "Magnetic recording", July 14, 2016.

8 S. Greaves, Y. Kanai and H. Muraoka, TMRC 2016, Stanford, USA, paper F4 (Invited), "Multiple layer microwave-assisted magnetic recording".

9 S. J. Greaves, Y. Kanai and H. Muraoka, ICAUMS, Tainan, Taiwan, paper BB-03 (Invited), "Multiple layer microwave-assisted magnetic recording", August 2, 2016.

10 S. J. Greaves, Y. Kanai and H. Muraoka, MSJ annual conference, Fukuoka, Japan, paper 21aA-4 (invited), "Microwave assisted recording on ECC and AFC media", September 21, 2017.

11 S. J. Greaves, Y. Kanai and H. Muraoka, TMRC 2017, Tsukuba, Japan, paper E4 (invited), "Antiferromagnetically coupled media for microwave-assisted magnetic recording".

12 S. J. Greaves, Y. Kanai and H. Muraoka, MSJ annual conference, Tokyo, Japan, paper 11aC-3 (invited), "Microwave assisted magnetic recording on media with multiple recording structures", September 11, 2018.

2 Activities in academic societies

2.1 Activities on committees of academic societies

Hiroaki Muraoka

映像情報メディア学会東北支部長 平成 24 年 5 月–平成 25 年 5 月

映像情報メディア学会代議員 平成 25 年 4 月–平成 27 年 3 月

日本磁気学会顧問 平成 25 年 9 月–現在

Simon Greaves

日本磁気学会広報理事 2017年6月から.

AdCom member, IEEE Magnetics Society 2018 - 2020.

IEEE Magnetics Society Sendai-Sapporo chapter vice-chair 2013 - present.

2.2 Planning and organising academic international conferences

Simon Greaves

Programme committee member, MMM/Intermag 2013, Chicago.

Publicity co-chair, session chair, TMRC 2013, Tokyo.

Programme committee member, MMM 2016, New Orleans.

Programme committee member, Intermag 2017, Dublin.

Publications co-chair, TMRC 2018, Milpitas.

2.3 Editor and reviewer for academic journals

Hiroaki Muraoka

IEEE Magnetics Letters, Associate Editor 平成 27 年 12 月–現在

Simon Greaves

Reviewer for IEEE Transactions on Magnetics, IEEE Magnetics Letters, Journal of Applied Physics, Journal of Magnetism and Magnetic Materials, Journal of Physics, D.

Editor for TMRC 2018 conference papers published in IEEE Transactions on Magnetics.

3 Contributions to society

3.1 Educational activities outside university

Simon Greaves

Part time lecturer at National Institute of Technology Sendai College, Hirose Campus.

3.2 Instruction and education for industry

None

3.3 Activities for national and local governments and public organisations

Hiroaki Muraoka

NEDO 技術委員 平成 25 年 1 月－平成 26 年 3 月
平成 27 年 2 月－平成 28 年 3 月

NHK 放送技術審議会委員 平成 25 年 5 月－平成 27 年 12 月
同 副委員長 平成 28 年 1 月－平成 29 年 4 月
同 委員長 平成 29 年 5 月－令和元年 5 月

文部科学省科学技術・学術審議会(情報科学技術委員会)専門委員
平成 23 年(2011 年)2 月－2015 年 4 月
同 主査代理(併任) 平成 27 年(2015 年)5 月－平成 29 年 3 月

文部科学省国立研究開発法人審議会臨時委員 平成 29 年(2017 年)4 月－現在

3.4 Outreach activities

Annual presentations at Open Campus and Open Day events for prospective students and the general public.

4 Research funds/grants received

4.1 Grant-in-aid for scientific research (KAKENHI)

None

4.2 Other grants and subsidies

Simon Greaves

寄付金名称:ストレージ方式に関する研究助成金
企業 :昭和電工株式会社
受入金額 :5,000,000 円(平成 25 年度)

寄付金名称:ストレージデバイス・材料に関する研究助成金
企業 :情報ストレージ研究推進機構 SRC
受入金額 :2,000,000 円(平成 26 年度)

寄付金名称:ストレージデバイス・材料に関する研究助成金
企業 :情報ストレージ研究推進機構 SRC
受入金額 :1,000,000 円(平成 27 年度)

寄付金名称:ストレージ方式に関する研究助成金
企業 :情報ストレージ研究推進機構
受入金額 :1,500,000 円(平成 28 年度)

寄付金名称:3次元磁気記録新ストレージアーキテクチャのための技術開発
企業 :JST (S-イノベ)
受入金額 :2,000,000 円(平成 28 年度)

寄付金名称:3次元磁気記録新ストレージアーキテクチャのための技術開発
企業 :JST (S-イノベ)
受入金額 :2,000,000 円 (平成 29 年度)

寄付金名称:ストレージ方式に関する研究助成金
企業 :情報ストレージ研究推進機構
受入金額 :1,500,000 円 (平成 29 年度)

寄付金名称:3次元磁気記録・再生の最適化の研究
企業 :スピントロニクス学術連携研究教育センター
受入金額 :250,000 円 (平成 30 年度)

寄付金名称:ストレージ方式に関する研究助成金
企業 :情報ストレージ研究推進機構
受入金額 :1,500,000 円 (平成 30 年度)

5 International joint research, collaborative research and collaborative education

During this period we have been involved in international joint research with colleagues in Singapore and the UK. Our work with the National University of Singapore's Data Storage Institute focused on optimising HAMR and MAMR recording systems using the response surface methodology. In addition to this we have been part of a JSPS Core-to-Core collaboration between Tohoku University and the University of York in the UK.

6 Achievements of work done under the framework of the Joint Usage / Research Centre

None

7 Research supervision

7.1 List of lectures

Simon Greaves

Introductory quantum mechanics (2nd year undergraduate course)

Information Storage Technology (master's course)

7.2 List of bachelor's, master's and doctoral degree students supervised

Ph.D. and Master's students

[2013]

寺嶋亮
丸子祥弘
松浦希望
坂下直己

[2014]

山本直人
佐藤拓巳

[2015]

原彬大

[2016]

亀井仁志 (社会人博士)
神拓磨

[2017]

松本慎也(社会人博士)
上田尚弥
鈴木颯一郎
秋田谷尚紀
神田雅生
廣川祐生
渡邊快

[2018]

齋藤仁
金子舜
菊地忠裕
佐藤信之
間瀬朗生

8 Honours, awards and prizes

Hiroaki Muraoka

平成 25 年(2013 年) 11 月 1 日
The Second Asian Conference on Information System (ACIS 2013) Best Paper Award
“Risk-aware data replication to massively multi-sites against widespread disasters”

平成 26 年(2014 年)9 月 3 日
平成 26 年度日本磁気学会業績賞
「垂直磁気記録方式に基づく高密度磁気記録技術の研究推進」

平成 30 年(2018 年)3 月 22 日
電子情報通信学会フェロー
「垂直磁気記録の高密度化のための磁気記録機構の研究」

平成 30 年(2018 年)5 月 31 日
電気学会 第 74 回電気学術振興賞 進歩賞 (中村隆喜、亀井仁志、村岡裕明)
「耐災害性を強化する地域分散ストレージ技術の開発と実証」

平成 30 年(2018 年)6 月 3 日
AUMS Award

平成 30 年(2018 年)9 月 12 日
平成 30 年度日本磁気学会学会賞
「垂直磁気記録方式による高密度磁気記録システム技術に関する研究」

平成 30 年(2018 年)9 月 12 日
日本磁気学会フェロー

Simon Greaves

平成25年
石田實記念財団研究奨励賞
磁気記録の情報ストレージシステムのシミュレーションに関する研究。

9 Others

None