### 英文术语

1. [[5](#_ENREF_5)]The ***giant magnetoresistance (GMR) effect***
2. [[5](#_ENREF_5)] and ***TMR values*** can now be made larger than the ***GMR values*** in metallic devices.

Note: use “TMR value/ratio is 500%” instead of “MR is 500%” This is also warned by my thesis examiner

1. [[5](#_ENREF_5)]***tunnel magnetoresistance*** (TMR)
2. TMR is upright roman even it is used as val[1](#_ENREF_1)ue, see “2016-review-Spin-Transfer Torque Memories Devices, Circuits-IEEE proceedings-Xuanyao Fong & 2017-review-Spintronics based random access memory a review-mat today-Sabpreet Bhatti”
3. [[40](#_ENREF_40)]the ***full-width-at-half-maximum (FWHM)*** linewidth due to this component of the phase noise is given by
4. [[5](#_ENREF_5)] ***spin transfer torques*** (STT)
5. [[41](#_ENREF_41)] ***spin-Hall effect*** (SHE)
6. [[42](#_ENREF_42)]***Fokker-Planck equation*** (FPE)
7. (sup of [[3](#_ENREF_3)])***damping-like*** spin orbit torque
8. (sup of [[3](#_ENREF_3)])***field-like*** SOT
9. [[3](#_ENREF_3)]The vDW(T) curves are shifted horizontally to account for ***Joule heating***(Joule 首字母大写)
10. [[43](#_ENREF_43)]Bioinspired Computing
11. attributive clause定语从句
12. adverbial clause 状语从句
13. non-restrictive relative clauses, 非限制性定语从句
14. restrictive relative clauses, 限制性定语从句
15. relative clause 关系从句
16. relative pronoun关系代词

## 中文术语

### 专业术语

1T1M单晶体管单磁隧道结p1023 of [R17] (use this)

anisotropic magnetoresistance: 各向异性磁电阻（anisotropic magnetoresistance, AMR）,定义之后只用“AMR”p2 of [R16]

Anisotropy constant单轴各向异性常数p314 of [R16] 各向异性常数(use this)

Anisotropy field：analog to ”Anisotropy constant” 各向异性场(use this)

Antiferromagnet 反铁磁[R10]

Atomistic model原子尺度自旋模型[刘要稳邮件] (use this) 原子尺度微磁学模型[刘要稳邮件]

Bloch Wall: Bloch壁[R1] (use this)

Compact model: 紧凑模型 [R18] (use this)

Collective coordinate approach 集体坐标的方法[R23] 集体坐标法(use this)

Composition: 组分

Cross point 交叉点型p1022 of [R17] (use this)

Damping-like torque 类阻尼力矩 [R14]

Demagnetization energy 退磁能p314 of [R16] (use this) 静磁能p314 of [R16]

Demagnetizing field退磁场p314 of [R16] (use this)

Diamagnetism 抗磁p14 of [R31] (use this)

Domain 畴[R9] (use this)

domain wall 畴壁[R8,R9] (use this) 磁畴壁结构 [R1]

domain wall dynamics 畴壁动力学 [R9] (use this)

domain wall motion 畴壁运动[R9] (use this) 畴壁的移动[R8] 畴壁的移动 [R3]

domain wall velocity 畴壁移动速度(use this) 磁畴壁移动速度[R1]

Dzyaloshinskii-Moriya interaction: Dzyaloshinskii-Moriya相互作用[R13] DM相互作用 (use this)

Dzyaloshinskii-Moriya interaction constant: analog to “Dzyaloshinskii-Moriya interaction”, DM相互作用常数

Exchange constant 交换常数 p314 of [R16] (use this)

Exchange energy 交换能p319 of [R16] (use this)

Exchange field 交换场 analog to “Exchange constant” (use this)

ferromagnet 铁磁(use this) [R3] p14 of [R31]

ferromagnet/heavy metal heterostructure铁磁/重金属异质结构(use this) 铁磁金属/重金属异质结构[R3] 磁性金属/重金属异质薄膜 [R3]

Field-like torque 类场力矩 [R14]

FiM/HM similar with FM/HM, use亚铁磁/重金属异质结构(use this)

first-principles calculations 第一性原理计算[R12] (use this)

giant magnetoresistance: 巨磁电阻（giant magnetoresistance, GMR）,定义之后只用“GMR 效应”p1 of [R16]

gyromagnetic ratio 旋磁比p316 of [R16] (use this)

Hamiltonian: 哈密顿量

heat assisted magnetic recording 热辅助磁记录p331 of [R16] (use this)

Joule heating 焦耳热 [R2] (use this)

Kagome: 笼目

Kubo linear response theory: Kubo线性响应理论 [R12] (use this)

leaky-integrate-fire, LIF 漏-收集-激发section 6.3 of [R21] (use this)

Logic device 逻辑器件 [R13]

Long-term depression (LTD) 长期抑制 摘要of [R20] 长时程抑制section 6.3 of [R21] (use this)

Long-term potential (LTP) 长期增强 摘要of [R20] 长时程增强section 6.3 of [R21] (use this)

Macrospin宏观自旋 p32 of [R23] 宏自旋[R26] 宏自旋模型(use this)

Magnetic tunnel junction 磁性隧道结p65 of [R16] 磁隧道结(use this)

Magnetization磁矩p2 of [R27] (use this) 磁化矢量p323 of [R16] 磁化取向、磁化强度p5 of [R27]

Magnetization state 磁化状态？

Magnetization switching 磁矩翻转p325 of [R16] (use this) 磁化翻转p313 of [R16]

Magnetization direction 磁化方向p67 of [R16] (use this)

Magnetization dynamics 磁动力学p313 of [R16] (use this)

Magnetization oscillation磁矩振荡? (refer to spin torque nano-oscillator)

Magnetized heterostructure 磁化异质结 title of [R28] (use this)

Micromagnetics 微磁学 p313 of [R16] 微磁模型(use this)

Microscopic origin 微观起源 [R29]

MRAM 磁性随机存取存储器p129 of [R16] 磁随机存储器 [R15] (use this)

Magnetization dynamics 磁动力学[R7] (use this)

Neel Wall: Neel壁[R1] (use this)

Vacuum Permeability μ0 磁导率p314 of [R16] 真空磁导率 (use this)

Paramagnetism顺磁p14 of [R31] (use this)

Perpendicular magnetic anisotropy (PMA) 垂直磁各向异性 [R7] (use this)

Possion neuron泊松神经元？

Precession 进动p317 of [R16] (use this)

Racetrack memory: p1045 of [R17] 赛道型磁性存储器, 赛道型磁存储器(use this)

Rashba effect: Rashba效应[R3] (use this)

rare earth稀土p331 of [R16] (use this)

Read Disturbance读取干扰 [R30] (use this)

reduced Planck constant 约化普朗克常量p316 of [R16] (use this)

restricted Boltzmann machine受限波尔兹曼机[R25] (use this)

Sample: 样本

Short-term plasticity (STP) 短时程突触可塑性 section 6.3 of [R21] (use this)

Skyrmion 斯格明子 [R13] (use this)

SOT-MRAM following the usage of STT-MRAM

spike-time-dependent plasticity (STDP) 脉冲时间依赖突触可塑性 摘要of [R20] (use this)

spiking neural network (SNN)脉冲神经网络[R20] (use this)

spintronic oscillator 自旋电子振荡器？(refer to spin torque nano-oscillator)

spin dynamics 自旋动力学[R3] (use this)

Spin-Hall effect 自旋霍尔效应 [R3] (use this)

spin-orbit coupling 自旋轨道耦合 [R3] (use this)

Spin-orbit torque 自旋轨道力矩(use this) 自旋-轨道力矩 [R3] 自旋轨道矩[R5]

Spin polarization 自旋极化率p71 of [R16]

spin torque nano-oscillator 自旋力矩纳米振荡器p342 of [R16] (use this)

Spin transfer torque 自旋转移力矩[R6](use this) 自旋转矩[R1] 自旋转移矩[R4,R5]

Spin valve 自旋阀p7 of [R16]

Spin wave 自旋波[R9] (use this)

Stochastic computing 随机计算 [R19] (use this)

Stochastic neuron 随机性神经元？

STT-MRAM 基于STT效应的STT-MRAM，定义之后只用STT-MRAM p129 of [R16] (use this)

Terahertz (THz) 太赫兹[R11] (use this)

Transition metal过渡金属p331 of [R16] (use this)

Tunneling magnetoresistance隧穿磁电阻（tunneling magnetoresistance, TMR）,定义之后只用“TMR”p14 of [R16]

Transistor

Voltage-Controlled Magnetic Anisotropy (VCMA)电压调控磁各向异性 [R30](use this)

Vortex: refer to “Vortex Wall” use磁涡旋 (use this)

Vortex Wall 磁涡旋壁 [R1] (use this)

Walker breakdown沃克崩溃[R22] (use this)

Zeeman energy： Zeeman能 p314 of [R16] (use this)

### 高校名称

Korea Advanced Institute of Science and Technology (KAIST)[[here](https://baike.baidu.com/item/%E9%9F%A9%E5%9B%BD%E7%A7%91%E5%AD%A6%E6%8A%80%E6%9C%AF%E9%99%A2/5480797?fromtitle=%E9%9F%A9%E5%9B%BD%E7%A7%91%E5%AD%A6%E6%8A%80%E6%9C%AF%E5%AD%A6%E9%99%A2&fromid=3050942&fr=aladdin) and [here](https://www.zhihu.com/question/22289599)] 韩国科学技术院(use this)

Korea Institute of Science and Technology [[here](https://www.zhihu.com/question/22289599)]韩国科学技术研究院(use this)

Korea University [[here](https://baike.baidu.com/item/%E9%AB%98%E4%B8%BD%E5%A4%A7%E5%AD%A6/2651748?fromtitle=Korea%20University&fromid=11183612&fr=aladdin)] 高丽大学(use this)

Kyoto University 京都大学

Massachusetts Institute of Technology [[here](https://baike.baidu.com/item/%E9%BA%BB%E7%9C%81%E7%90%86%E5%B7%A5%E5%AD%A6%E9%99%A2/117999?fromtitle=MIT&fromid=31539&fr=aladdin)]麻省理工学院

Purdue University[[here](https://baike.baidu.com/item/%E6%99%AE%E6%B8%A1%E5%A4%A7%E5%AD%A6/4721800?fromtitle=Purdue%20University&fromid=2011508&fr=aladdin)]普渡大学

Spintec [R22]法国Spintec实验室 Spintec(use this)

UC Berkeley [[here](https://baike.baidu.com/item/%E5%8A%A0%E5%88%A9%E7%A6%8F%E5%B0%BC%E4%BA%9A%E5%A4%A7%E5%AD%A6%E4%BC%AF%E5%85%8B%E5%88%A9%E5%88%86%E6%A0%A1/854061?fromtitle=UC%20Berkeley&fromid=9317777&fr=aladdin)]加州大学伯克利分校

UCLA [[here](https://baike.baidu.com/item/%E5%8A%A0%E5%88%A9%E7%A6%8F%E5%B0%BC%E4%BA%9A%E5%A4%A7%E5%AD%A6%E6%B4%9B%E6%9D%89%E7%9F%B6%E5%88%86%E6%A0%A1?fromtitle=UCLA&fromid=1827130)]加州大学洛杉矶分校

***To check***

Angular momentum compensation角动量补偿点？

Artificial neural network

Berry curvature

bulk

cell

cooling coefficient 冷却系数？

Current driven

Diffusion equation

Dipole coupling

Exchange coupling

Fcc

Frequency spectrum

G factor

Group velocity

Heisenberg

inhomogeneous

Interband

Intraband

Inverse spin galvanic effect

Left-hand chirality

linewidth

Magnetization compensation磁矩补偿点？

Magnetic property

Magnetostatic energy ?

Mechanism

Net magnetization

Read error rate

Right-hand chirality

Saturation magnetization ?

Spatial resolved 空间分辨？

Spin coherence length

Sublattice ?

Texture

Thermal capacity 热容量？

Time Evolution

Write error rate

[R1] 2012-刘要稳-自旋转矩效应和Rashba效应所驱动的磁畴壁动力学研究

[R2] 2014-肖江-磁性绝缘体中的自旋波激发、传输、探测及其应用的理论研究

[R3] 2014-吴义政-单晶铁磁金属\_重金属异质结构中自旋-轨道力矩效应研究

[R4] 2012-张宗芝-金属自旋电子学材料、器件与磁动力学

[R5] 2015-赵巍胜-CoFeB\_MgO磁性多层膜中自旋轨道矩与自旋转移矩耦合效应研究

[R6] 2012-曾中明-无需磁场的自旋转移力矩纳米振荡器的制备及微波性能研究

[R7] 2016-张宗芝-垂直磁化交换耦合复合薄膜结构的超快自旋动力学研究

[R8] 2013-郭光华-磁子自旋流驱动的畴壁动力学研究

[R9] 2013-王向荣-纳米磁结构中的自旋波与畴壁动力学

[R10] 2016-宋成-FeRh反铁磁-铁磁相转变机理与调控

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[R15] 2016-何亮-有关新型磁随机存储器的新材料及新器件的研究

[R16] 2015-自旋电子学导论 上卷\_韩秀峰编著

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[R21] 2018-斯格明子电子学的研究进展-APS-赵巍胜

[R22] 2011-电流驱动下磁畴壁快速运动的研究\_韩秀峰

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[R24] 2017-硕士毕业论文-自旋\_轨道矩驱动的手性磁畴壁动力学研究-湖南大学-晏寒

[R25] 2017-受限波尔兹曼机简介-张春霞

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[R28] 2019-phd thesis-自旋轨道矩驱动垂直磁化异质结磁矩翻转和磁畴壁运动的研究-崔宝山-高美珍-席力

[R29] 2004-晶体材料中3d2态离子自旋哈密顿参量的微观起源-APS-杨子元.pdf, 2004-晶体材料中3d2态离子自旋哈密顿参量的微观起源-APS-杨子元.png

[R30] 2016-STT-MRAM存储器的研究进展-赵巍胜

[R31] 2003-凝聚态磁性物理-姜寿亭