PUBLICATION LIST of Guang-Yu Guo (2021/12)

(郭光宇教授學術著作目錄)

郭光宇教授已發表了290多篇期刊論文,含頂尖科技期刊「科學」(Science)(1篇：H17)、物理學頂尖期刊「自然物理」(Nature Physics)(1篇：D14)、「物理評論通訊」(Physical Review Letters)(18篇：A1, C1, C3, C4, C5, C9, C10, C15, D1, D10, F1, F4, F5, F23, F37, J3, K13, L14) 與「物理評論X」(Physical Review X)(2篇：D12, F39)、化學頂尖期刊「美國化學學會期刊」(J. Amer. Chem. Soc.)(1篇：F42)、奈米科學頂尖期刊「奈米通訊」(Nano Letters)(1篇：E8)及高影響因子自然期刊「自然通訊」(Nature Commun.)(4篇：A45, D9, F8, F49)等頂尖期刊論文共20多篇。除了那篇「科學」論文[H17]和2篇「物理評論通訊」論文[J3, K13]外，這些頂尖期刊論文都是郭教授於1998年夏加入臺大物理系後發表的。郭教授的論文已被SCI 論文引用9400多次，H-指數（H-index）高達49（參見Web of Science）[若依谷歌學者(Google Scholars)，郭教授的論文已被引用12000多次，H-指數為57]。

近6年來(2016年1月後)，郭教授繼續研究尖端材料(如新興的二維材料，神奇的拓樸材料，金屬氧化物與其異質結構、鐵基超導體及光學超穎材料)新穎物理性質，又發表了約70篇期刊論文，包括物理學頂尖期刊美國物學會的「物理評論通訊」(**Physical Review Letters**)(影響因子:9.2)(3篇)與「物理評論X」(**Physical Review X**)(影響因子:15.8)(2篇)及高影響因子期刊自然期刊公司的「自然物理」(**Nature Physics**)(影響因子:20.0)(1篇) 與「自然通訊」(**Nature Communications**)(影響因子:14.9)(4篇)，這些論文已被引用了900多次。下面依領域列出郭教授全部已發表的期刊論文。

Prof. Guang-Yu Guo has authored and co-authored more than 290 refereed papers, including 1 <Science> paper [H17], 1 <Nature Physics> paper [D14], 18 <Physical Review Letters> papers [A1, C1, C3, C4, C5, C9, C10, C15, D1, D10, F1, F4, F5, F23, F37, J3, K13, L14] and 2 <Physical Review X> papers [D12, F39], 1 <Journal of American Chemical Society> paper [F42], 1 <Nano Letters> paper [E8], and 4 <Nature Communications> papers [A45, D9, F8, F49]. Except the <Science> paper [H17] and two of the <Physical Review Letters> papers [J3, K13], all these highly prestigious and high impact factor journal papers were published after he joined the Department of Physics, National Taiwan University in the summer of 1998. His papers have been cited more than 9,400 times, and his H-index is 49 (see Web of Science) [Total citations of his papers would be more than 12,000 times and his H-index would be 57, according to Google Scholars].

In the past 6 years (since Jan., 2016), Prof. Guo has continued vigorously investigating the novel properties of advanced materials (such as emerging two-dimensional materials, magical topological materials, intriguing metal oxides and their heterostructures, iron-based superconductors and optical metamaterials). During this period, he has again published 70 papers in international journals including high-impact factor journals **Nature Physics** (Impact Factor: 20.0) (1 paper) and **Nature Communications** (Impact Factor: 14.9) (4 papers) as well as very prestigious physics journal **Physical Review Letters** (Impact Factor: 9.2) (3 papers) and **Physics Review X** (Impact Factor: 14.9) (2 papers). These 70 papers have already been cited over 900 times. All his papers are listed below according to research topics.

A. Nano-meter Materials and Mesoscopic Systems

Carbon, BN and SiC nanotubes and nanostructures

A1 (citations: 105) L. Liu, **G.Y. Guo**, C.S. Jayanthi and S.Y. Wu,
Colossal paramagnetic moments in metallic carbon nanotori,
Phys. Rev. Lett. 88, 217206 (2002).

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Linear and nonlinear optical properties of carbon nanotubes from first-principles calculations,
Phys. Rev. B **69**, 205416 (2004).

A3 (45) **G.Y. Guo***, K.C. Chu, D.S. Wang, C.-G. Duan,
Static polarizability of carbon nanotubes: *Ab initio* independent-particle calculations,
Comput. Mater. Sci. **30**, 269 (2004).

A4 (18) Y.Y. Chou, **G.Y. Guo**, L. Liu, C.S. Jayanthi and S.Y. Wu,
Electric conductance of single-wall carbon nanotube-contacted carbon nanotorus: Effects of transparency and equivalence of contacts, J. Appl. Phys. **96**, 2249 (2004).

A5 (142) **G.Y. Guo*** and J.C. Lin
Systematic ab initio calculation of the optical properties of BN nanotubes
Phys. Rev. B **71**, 165402 (2005).

A6 (68) **G.Y. Guo** and J.C. Lin
Second harmonic generation and linear electro-optical coefficients of BN nanotubes
Phys. Rev. B **72**, 75416 (2005).

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Second harmonic generation and linear electro-optical coefficients of BN nanotubes (vol. 72, art. no. 075416, 2005)
Phys. Rev. B **77**, 049901 (2008).

A8 (10) **G.Y. Guo**, L. Liu, K.C. Chu, C.S. Jayanthi and S.Y. Wu,
Electro-mechanical responses of single-walled carbon nanotubes: Interplay between the strain-induced energy gap opening and the pinning of the Fermi level
J. Appl. Phys. **98**, 044311 (2005).

A9 (45) **G.Y. Guo***, S. Ishibashi, T. Tamura and K. Terakura
Static dielectric response and Born effective charge of BN nanotubes from ab initio finite electric calculations, Phys. Rev. B **75**, 245403 (2007).

A10 (141) I.J. Wu and **G.Y. Guo***
Optical properties of SiC nanotubes: An *ab initio* study, Phys. Rev. B **76**, 035343 (2007).

A11 (50) I.J. Wu and **G.Y. Guo***
Second-harmonic generation and linear electro-optical coefficients of SiC polytypes and nanotubes, Phys. Rev. B **78**, 035447 (2008).

A12 (107) H. C. Hsueh*, **G. Y. Guo*** and S. G. Louie
Excitonic effects in the optical properties of a SiC sheet and nanotubes
Physical Review B **84**, 085404 (2011)

Atomic chains, one-dimensional (1D) and quasi-1D systems

A13 X.-F. Jiang and **G. Y. Guo**

Spin gap in doped dimerized chain near half-filling, Physica B **334**, 451 (2003).

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Quantum self-consistent approach to the charge gap of the quasi-one-dimensional organic conductors, Solid State Commun. **129**, 443 (2004).

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An approach to temperature dependence of the magnetic excitation in the spin-Peierls chain with frustration, J. Phys. Soc. Japan **73** (2004) 1561.

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A17 (8) S. J. Luo, **G. Y. Guo** and A. Laref

A first-principles study of electronic and magnetic properties of a quasi-one-dimensional organic ferromagnet, Europhys. Lett. **77**, 37006 (2007)

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Systematic *ab initio* study of the magnetic and electronic properties of all 3*d* transition metal linear and zigzag nanowires,

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J. Phys. Chem. C **113**, 14615 (2009)

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An *ab initio* study of the magnetic and electronic properties of Fe, Co, and Ni nanowires on Cu(001) surface, Comp. Phys. Commun. **182**, 84 (2011).

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Magnetic anisotropy and spin-spiral wave in V, Cr and Mn chains on Cu(001) surface: First principles calculations, Journal of Physics D: Applied Physics **44**, 205003 (2011)

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Ab initio studies of spin-spiral waves and exchange interactions in 3d transition metal atomic chains, Physical Review B **83**, 144403 (2011)

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Molecules, Nanoparticles, quantum dots and quantum rings

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A27 (4) J. C. Lin and **G. Y. Guo***

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A28 J. C. Lin and **G. Y. Guo***

Spin-density-functional studies of quantum dots and quantum rings

J. Magn. Magn. Mater. **239**, 240 (2002).

A29 (5) **G.Y. Guo**, Y.K. Wang and Y.Y. Chen,

Ab initio studies of the electronic structure and magnetic properties of bulk and nano-particle $CeCo_2$, J. Magn. Magn. Mater. **272**, E1193-1194 (2004).

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The quantified NTO analysis for the electronic excitations of molecular many-body systems Chemical Physics Letter **514**, 362-367 (2011).

A31 (7) J.-H. Li, J.-D. Chai*, **G. Y. Guo**, M. Hayashi*

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Plasmonic excitations in quantum-sized sodium nanoparticles studied by time-dependent density functional calculations, Phys. Rev. B **88**, 155437 (2013).

Graphene and two-dimensional (2D) materials

A33 (28) Y.-F. Hsu, and **G. Y. Guo***

Anomalous integer quantum Hall effect in AA-stacked bilayer graphene,

Phys. Rev. B **82**, 165404 (2010)

A34 (25) Y. F. Hsu and **G. Y. Guo***,

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High Chern number quantum anomalous Hall phases in graphene ribbons with Haldane orbital coupling, Physical. Review B **84**, 165453 (2011)

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Nonlinear Optical Properties of Transition-Metal Dichalcogenide MX_2 (M = Mo, W; X = S, Se) Monolayers and Trilayers from First-Principles Calculations,

J. Phys. Chem. C **119**, 13268 (2015)

A39 (1) T.-P. Wu, X.-Q. Wang, **G. Y. Guo**, F. B. Anders and C.-H. Chung*

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A54 (1) M. Cheng, Z.-Z. Zhu and **G.-Y. Guo***, Strong bulk photovoltaic effect and second-harmonic generation in two-dimensional selenium and tellurium, Phys. Rev. B **103**, 245415 (2021)

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B. Layered Transition Metal Dichalcogenides

B1 (78) **G. Y. Guo**, and W. Y. Liang,
The Electronic Structures of Platinum Dichalcogenides: PtS_2, $PtSe_2$ and $PtTe_2$
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B3 **G. Y. Guo**, W. Y. Liang and A. D. Yoffe,
The LMTO-ASA Method and Band Structures of Layered-Structure Transition Metal Chalcogenides, in *Intercalation in Layered Materials*,
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B4 (53) **G. Y. Guo** and W. Y. Liang,
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C. Spin Hall and Nernst Effects as well as Anomalous Hall and Nernst Effects

C1 (105) **G. Y. Guo**, Y. Yao and Qian Niu
Ab initio calculation of intrinsic spin Hall Effect in semiconductors,
Phys. Rev. Lett. 94, 226601 (2005).

C2 (41) T. W. Chen, C. M. Huang and **G. Y. Guo**
Conserved spin and orbital angular momentum Hall current in a two-dimensional electron system with Rashba and Dresselhaus spin-orbit coupling, Phys. Rev. B **73**, 235309 (2006).

C3 (30) H. J. Chang, T. W. Chen, J.W. Chen, W.C. Hong, W.C. Tsai, Y. F. Chen and **G. Y. Guo**
Current and strain-induced spin polarization in InGaN/GaN superlattices
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C4 (246) **G. Y. Guo**, S. Murakami, T. W. Chen and N. Nagaosa
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C5 (73) **G. Y. Guo**, S. Maekawa and N. Nagaosa

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C7 (41) **G. Y. Guo**
Ab initio calculation of intrinsic spin Hall conductivity of Pd and Au
J. Appl. Phys. **105**, 125301 (2009)

C8 (4) T.-W. Chen*****, H.-C. Hsu and **G. Y. Guo***
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J. Appl. Phys. **109**, 07C502 (2011)

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Physical Review B **84**, 144427 (2011)

C14 (13) J.-C. Tung, H.-R. Fuh and **G. Y. Guo***
Anomalous and spin Hall effects in hcp cobalt from GGA + U calculations
Physical Review B **86**, 024435 (2012)

C15 (81) P. He, L. Ma, Z. Shi, **G. Y. Guo***, J.-C. Zheng, Y. Xin and S. M. Zhou*
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D. Topological Insulators and Topological Semimetals

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