

PUBLICATION LIST of Guang-Yu Guo (2025/12)

(郭光宇教授學術著作目錄)

郭光宇教授已發表了320多篇期刊論文，含頂尖科技期刊「科學」(Science) (1篇：H17)、「美國科學院院刊」(PNAS) (1篇：F42) 與「自然通訊」(Nature Commun.) (7篇：A46, B7, D9, E23, F8, F52, L20)、物理學頂尖期刊「自然物理」(Nature Physics) (1篇：D15)、「物理評論通訊」(Physical Review Letters) (19篇：A1, C1, C3, C4, C5, C9, C10, C15, C31, D1, D10, F1, F4, F5, F23, F37, J3, K13, L14) 與「物理評論X」(Physical Review X) (4篇：D12, D22, D23, F39)、化學頂尖期刊「美國化學學會期刊」(J. Amer. Chem. Soc.) (1篇：F45)、及奈米科學頂尖期刊「奈米通訊」(Nano Letters) (1篇：E8) 與「美國化學學會奈米」(ACS Nano) (1篇：A58)等頂尖期刊論文共36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。郭教授的論文已被引用17,700多次，H-指數 (H-index) 高達66 [參見谷歌學者 (Google Scholars) : <https://scholar.google.com/citations?user=XyumTigAAAAJ&hl=zh-TW>]。下面依研究議題/領域列出郭教授已發表的期刊論文。

Prof. Guang-Yu Guo has authored and co-authored over 320 peer-reviewed papers, including highly prestigious science journal papers: 1 <Science> paper [H17], 1 <PNAS> paper [F42], and 7 <Nature Communications>[A46, B7, D9, E23, F8, F52, L20] ; top physics journal papers: 1 <Nature Physics> paper [D15], 19 <Physical Review Letters> papers [A1, C1, C3, C4, C5, C9, C10, C15, C31, D1, D10, F1, F4, F5, F23, F37, J3, K13, L14] and 4 <Physical Review X> papers [D12, D22, D23, F39]; top chemistry journal papers: 1 <Journal of American Chemical Society> paper [F45]; and top nano science journal papers: 1 <Nano Letters> paper [E8], 1 <ACS Nano> paper [A58] (total 36 papers in highly prestigious journals). Except the <Science> paper [H17] and two of the <Physical Review Letters> papers [J3, K13], all these highly prestigious 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 17,700 times, and H-index is 66 (see Google Scholars : <https://scholar.google.com/citations?user=XyumTigAAAAJ&hl=zh-TW>). His published papers are listed below according to research topics/fields.

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A. Nanometer Materials and Mesoscopic Systems

Carbon, BN and SiC nanotubes and nanostructures

A1 (citations: 194) L. Liu, G.Y. Guo, C.S. Jayanthi and S.Y. Wu,

Colossal paramagnetic moments in metallic carbon nanotubes,

Phys. Rev. Lett. **88**, 217206 (2002).

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Linear and nonlinear optical properties of carbon nanotubes from first-principles calculations,
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Static polarizability of carbon nanotubes: *Ab initio* independent-particle calculations,

Comput. Mater. Sci. **30**, 269 (2004).

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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).
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Physical Review B **84**, 085404 (2011)
- A13 (21) Y.-S. Huang, Y.-H. Chan and **G. Y. Guo***
Large shift current via in-gap and charge-neutral exciton excitations in a monolayer and nanotubes of BN, Physical Review B **108**, 075413 (2023)

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

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- A15 (1) X.-F. Jiang and **G.Y. Guo**
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- A16 X.-F. Jiang, **G.Y. Guo** and D.Y. Xing,
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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Possible ferromagnetism in s- and sp-electron element nanowires
Chem. Phys. Lett. **472**, 99 (2009)

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Magnetism of 3d-transition metal (Fe, Co and Ni) nanowires on w-BN (001)
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A22 (45) J. C. Tung and **G. Y. Guo***

Magnetic moment and magnetic anisotropy of linear and zigzag 4d and 5d transition metal nanowires: First-principles calculations, Phys. Rev. B **81**, 094422 (2010).

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

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Anomalous integer quantum Hall effect in AA-stacked bilayer graphene,
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- inverted InAs/GaSb quantum well driven by tilted magnetic fields, *Phys. Rev. B* **95**, 195408 (2017).
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- A49 (183) Y. Fang, S. Wu, Z.-Z. Zhu and **G. Y. Guo***, Large magneto-optical effects and magnetic anisotropy energy in two-dimensional Cr₂Ge₂Te₆, *Phys. Rev. B* **98**, 125416 (2018).
- A50 (25) C.-C. Su, C.-S. Li, T.-C. Wang, S.-Y. Guan, R. Sankar, F. Chou, C.-S. Chang, W.-L. Lee, **G.-Y. Guo*** and T.-M. Chuang*, Surface termination dependent quasiparticle scattering interference and magneto-transport study on ZrSiS, *New J. Phys.* **20**, 103025 (2018).
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- A52 (93) V. K. Gudelli and **G. Y. Guo***, Magnetism and Magneto-optical Effects in Bulk and Few-layer CrI₃: A Theoretical GGA + U Study, *New J. Phys.* **21**, 053012 (2019).
- A53 (11) A. A. Pervishko, D. Yudin, V. K. Gudelli, A. Delin, O. Eriksson and **G.-Y. Guo**, Localized surface electromagnetic waves in CrI₃-based magnetophotonic structures *Optics Express* **28**, 29155-29165 (2020)
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- A55 (29) 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 and their Intercalated complexes

- B1 (162) **G. Y. Guo**, and W. Y. Liang,
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- B3 **G. Y. Guo**, W. Y. Liang and A. D. Yoffe,
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J. Phys.: Condens. Matter **6**, 4479 (1994).
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C. Spin Hall and Nernst Effect as well as Anomalous Hall and Nernst Effect

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Ab initio calculation of intrinsic spin Hall Effect in semiconductors,
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Intrinsic spin Hall effect in platinum: First-principles calculations
Phys. Rev. Lett. **100**, 096401 (2008).
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Universal relation and hyper-selection rule, *Phys. Rev. B* **79**, 125301 (2009)
- C7 (65) **G. Y. Guo**
Ab initio calculation of intrinsic spin Hall conductivity of Pd and Au
J. Appl. Phys. **105**, 125301 (2009)
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Physical Review B **84**, 144427 (2011)
- C14 (24) J.-C. Tung, H.-R. Fuh and **G. Y. Guo***
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Physical Review B **86**, 024435 (2012)
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Chemical composition tuning of the anomalous Hall effect in isoelectronic $L1_0$ FePd $_{1-x}$ Pt $_x$ alloy
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