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1. J. Zhou, D. Vincent, S. Acharya, S. Ojo, A. Abrand, Y. Liu, J. Gong, D. Liu, S. Haessly, J. Shen, S. Xu, Y. Li, Y. Lu, H. Stanchu, L. Mawst, B. Claflin, P. K. Mohseni, **Z. Ma**, and S.-Q. Yu, "Grafted AlGaAs/GeSn optical pumping laser operating up to 130 K," *Optica*, submitted on 09/15/2024.
2. J. Zhou, D. Vincent, S. Acharya, S. Ojo, A. Abrand, Y. Liu, J. Gong, D. Liu, S. Haessly, J. Shen, S. Xu, Y. Li, Y. Lu, H. Stanchu, L. Mawst, B. Claflin, P. K. Mohseni, **Z. Ma**, and S.-Q. Yu, "Grafted AlGaAs/GeSn optical pumping laser operating up to 130 K," arXiv: 2409.09752
3. H. N. Abbasi, H. A. Alamoudi, T. K. Ng, R. Singh, J. Gong, J. Zhou, Y. Lu, Y. Liu, D. Liu, S. Qiu, B. S. Ooi, I. Roqan, and **Z. Ma**, "Investigation of ultrathin surface passivation layers for GaN: a comparative analysis of Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, and SiN<sub>x</sub> in reducing surface recombination," *Applied Physics Letters*, submitted on 09/13/2024.
4. Y. Liu, J. Gong, S. Acharya, Y. Li, A. Abrand, F. Fei, J. M. Rudie, J. Zhou, Y. Lu, H. N. Abbasi, D. Vincent, S. Haessly, T.-H. Tsai, J. Xiao, P. K. Mohseni, S.-Q. Yu, and **Z. Ma**, "Characterization of AlGaAs/GeSn heterojunction band alignment via X-ray photoelectron spectroscopy," *Applied Surface Science*, submitted on 09/13/2024.
5. Y. Lu, J. Zhou, J. Gong, Y. Liu, H. Cao, M. Nong, Z. Liu, T. Alam, C. Gupta, X. Li, and **Z. Ma**, "High rectification, low leakage p-Si/n-AlN heterojunction PN diode," *IEEE Electron Device Letters*, submitted on 09/08/2024.
6. Y. Liu, Y. Li, S. Charaya, J. Zhou, J. Gong, A. Abrand, Y. Lu, D. Vincent, S. Haessly, P. K. Mohseni, S.-Q. Yu, and **Z. Ma**, "AlGaAs/GeSn p-i-n diode interfaced with ultrathin Al<sub>2</sub>O<sub>3</sub>," *IEEE Electron Device Letters*, submitted on 09/03/2024.
7. Y. Liu, J. Gong, S. Acharya, Y. Li, A. Abrand, J. M. Rudie, J. Zhou, Y. Lu, H. N. Abbasi, D. Vincent, S. Haessly, T.-H. Tsai, P. K. Mohseni, S.-Q. Yu, and **Z. Ma**, "Characterization of AlGaAs/GeSn heterojunction band alignment via X-ray photoelectron spectroscopy," arXiv: 2408.16884
8. H. N. Abbasi, X. Qi, Z. Ju, **Z. Ma**, Y.-H. Zhang, "Impact of ALD-deposited ultrathin nitride layers on carrier lifetimes and photoluminescence efficiency in CdTe/MgCdTe double heterostructures," arXiv: 2408.10696
9. Y. Liu, Y. Li, S. Charaya, J. Zhou, J. Gong, A. Abrand, Y. Lu, D. Vincent, S. Haessly, P. K. Mohseni, S.-Q. Yu, and **Z. Ma**, "AlGaAs/GeSn p-i-n diode interfaced with ultrathin Al<sub>2</sub>O<sub>3</sub>," arXiv: 2408.08451
10. Y. Banda, Y. Jia, S.-H. Cho, B. Davaasuren, M. Ben Hassine, Q. Wang, D. Anjum, Q. Gan, **Z. Ma**, S.-Y. Bae, T. K. Ng, and B. S Ooi, "On the structural and bandgap properties of mist-CVD-grown κ-Ga<sub>2</sub>O<sub>3</sub> post vacuum and ambient-air annealing," *AIP Advances*, submitted 08/15/2024.
11. H. N. Abbasi, J. Zhou, D. Wang, P. Wang, Y. Lu, J. Gong, D. Liu, Y. Liu, R. Singh, Z. Mi, and **Z. Ma**, "Si/AlN p-n heterojunction interfaced with ultrathin SiO<sub>2</sub>," *Applied Surface Science*, submitted on 07/25/2024.

12. H. N. Abbasi, J. Zhou, D. Wang, P. Wang, Y. Lu, J. Gong, D. Liu, Y. Liu, R. Singh, Z. Mi, and **Z. Ma**, "Si/AlN p-n heterojunction interfaced with ultrathin SiO<sub>2</sub>," arXiv: 2407.17360
13. H. N. Abbasi, M. Sheikhi, D. Kim, R. Singh, J. Gong, J. Zhou, Q. Zhang, S. Qiu, C. Adamo, P. Marshall, C. Cheung, V. Gambin, and **Z. Ma**, "Highly strained AlGaAs-GaAsP nanomembranes-based high-performance diode," *Advanced Materials Interfaces*, submitted on 07/03/2024.
14. H. N. Abbasi, X. Qi, Z. Ju, **Z. Ma**, and Y.-H. Zhang, "Impact of ALD-deposited ultrathin nitride layers on carrier lifetimes and photoluminescence efficiency in CdTe/MgCdTe double heterostructures," *Journal of Applied Physics*, submitted on 07/01/2024.
15. H. N. Abbasi, S. Lee, H. Jung, N. Gajowski, Y. Lu, L. Wang, D. Kim, J. Zhou, J. Gong, C. Chae, J. Hwang, M. Muduli, S. Nookala, **Z. Ma**, and S. Krishna, "Structural and electrical properties of grafted Si/GaAsSb heterojunction," *Applied Physics Letters*, 125, 101107 (2024). DOI: 10.1063/5.0225069
16. H. N. Abbasi, S. Lee, H. Jung, N. Gajowski, Y. Lu, L. Wang, D. Kim, J. Zhou, J. Gong, C. Chae, J. Hwang, M. Muduli, S. Nookala, **Z. Ma**, and S. Krishna, "Structural and electrical properties of grafted Si/GaAsSb heterojunction," arXiv: 2406.14433v2
17. J. Zhou, J. Gong, S. Lal, J. Kim, W. Lin, C. Chen, C. Li, Y. Lu, S. Qiu, Y. Dong, L. German, X. D. Wang, F. Xia, and **Z. Ma**, "Characteristics of native oxides-interfaced GaAs/Ge np diodes," *IEEE Electron Device Letters*, 45(9), 1669-1672, (2024). DOI: [10.1109/LED.2024.3424461](https://doi.org/10.1109/LED.2024.3424461)
18. J. Zhou, H. Wang, P. R. Huang, S. Xu, Y. Liu, J. Gong, J. Shen, D. Vincent, S. Haessly, A. Abrand, P. K. Mohseni, M. Kim, S. Yu, G. E. Chang, X. Gong, and **Z. Ma**, "GaAs/GeSn/Ge n-i-p diodes and light emitting diodes formed via grafting," *Journal of Vacuum Science and Technology B*, 42, 042213 (2024). DOI: 10.1116/6.0003619
19. H. Ye, K. Lan, **Z. Ma**, and G. Qin, "Operation mechanisms of flexible RF silicon thin film transistor under bending conditions," *Crystals*, 12, 1609 (2024). DOI: 10.3390/cryst12111609
20. E. Huang, K. Yang, **Z. Ma**, and M. MacDougall, "Demonstration of 1.3 megapixel GeSn SWIR focal plane array on silicon substrates," *Journal of Vacuum Science and Technology A*, pending decision.
21. J. Gong, D. Kim, H. Jang, F. Alema, Q. Wang, J. Zhou, Y. Li, T. K. Ng, S. Qiu, Y. Liu, M. Sheikhi, Y. Lu, R. Singh, X. Su, H. N. Abbasi, Q. Lin, S. Xie, K. Chabak, G. Jessen, C. Cheung, V. Gambin, S. S. Pasayat, A. Osinsky, B. S. Ooi, C. Gupta, and **Z. Ma**, "Characteristics of grafted monocrystalline Si/ $\beta$ -Ga<sub>2</sub>O<sub>3</sub> p-n heterojunction," *Applied Physics letters*, 124, 262101 (2024). DOI: 10.1063/5.0208744.
22. J. Zhou, J. Gong, M. Sheikhi, A. Dheenana, Q. Wang, H. Abbasi, Y. Liu, C. Adamo, P. Marshall, N. Wriedt, C. Cheung, Y. Li, S. Qiu, X. Li, T. K. Ng, Q. Gan, V. Gambin, B. S. Ooi, S. Rajan, and **Z. Ma**, "Synthesis and characteristics of a monocrystalline GaAs/ $\beta$ -Ga<sub>2</sub>O<sub>3</sub> p-n heterojunction," *Applied Surface Science*, 663, 160176 (2024). DOI: 10.1016/j.apsusc.2024.160176.
23. G. Wang, S. Xie, Y. Li, W. Zhang, J. Vigen, T. Shih, Q. Lin, J. Gong, **Z. Ma**, S. S. Pasayat, and C. Gupta, "Demonstration of near-size independent EQE for 368 nm UV micro-LEDs," *Physica Status Solidi (RRL) - Rapid Research Letters*, submitted on 05/15/2024.

24. R. Vidrio, D. Vincent, B. Bachman, C. Saucedo, M. Zahedian, Z. Xu, J. Lai, T. A. Grotjohn, S. Kolkowitz, J.-H. Seo, R. J. Hamers, K. G. Ray, **Z. Ma**, and J. T. Choy, "XPS analysis of molecular contamination and sp<sup>2</sup> amorphous carbon on oxidized (100) diamond," *Materials for Quantum Technology*, 4, 025201 (2024). DOI: 10.1088/2633-4356/ad4e8a
25. Y. Zhang, R. Rytkin, W. Ouyang, J. U. Kim, L. Tang, A. Mikhailov, K. Zhao, L. Zeng, Y. Wang, X. Lu, H. Zhang, A. Lantsova, E. Aprea, S. Li, G. Jiang, S. G. Seo, T. Wang, J. Wang, J. Liu, J. Gu, F. Liu, K. Bailey, Y. F. L. Li, A. Burrel, A. Pfenniger, A. Ardashev, T. Yang, N. Liu, Z. Lv, N. S. Purwanto, Y. Ying, Y. Lu, C. Hoepfner, A. Melisova, J. Gong, J. Jeong, J. Choi, W. Bai, S. H. Jin, **Z. Ma**, J. M. Torkelson, Y. Huang, R. K. Arora, I. R. Efimov, and J. A. Rogers, "Millimetre-scale, bioresorbable optoelectronic systems for minimally invasive electrotherapy," *Nature*, submitted 02/19/2024.
26. S. Xie, M. Sheikhi, S. Xu, MD Tahmidul Alam, Q. Lin, J. Zhou, L. Mawst, **Z. Ma**, and C. Gupta, "p-GaAs/n-Ga<sub>2</sub>O<sub>3</sub> heterojunction diode with breakdown voltage of ~800V," *Applied Physics Letters*, 124, 073503 (2024). DOI: 10.1063/5.0181056
27. J. Gong, J. Zhou, A. Dheenan, M. Sheikhi, F. Alema, T. K. Ng, S. S. Pasayat, Q. Gan, A. Osinsky, V. Gambin, C. Gupta, S. Rajan, B. S. Ooi, and **Z. Ma**, "Band alignment of grafted monocrystalline Si (001)/β-Ga<sub>2</sub>O<sub>3</sub> (010) p-n heterojunction determined by X-ray photoelectron spectroscopy," *Applied Surface Science*, 655 159615 (2024).
28. J. Gong, J. Zhou, A. Dheenan, M. Sheikhi, F. Alema, T. K. Ng, S. S. Pasayat, Q. Gan, A. Osinsky, V. Gambin, C. Gupta, S. Rajan, B. S. Ooi, and **Z. Ma**, "Band alignment of grafted monocrystalline Si (001)/β-Ga<sub>2</sub>O<sub>3</sub> (010) p-n heterojunction determined by X-ray photoelectron spectroscopy," *arXiv: 2312.00771* (2023)
29. H. N. Abbasi, X. Qi, J. Gong, Z. Ju, S. Min, Y.-H. Zhang, and **Z. Ma**, "Passivation of CdTe/MgCdTe double heterostructure by dielectric thin films deposited using atomic layer deposition," *Journal of Applied Physics*, 134, 135304 (2023) DOI: 10.1063/5.0161858
30. J. Gong, X. Su, S. Qiu, J. Zhou, D. Kim, T. K. Ng, B. S. Ooi, and **Z. Ma**, "Effects of UV/O<sub>3</sub> and O<sub>2</sub> plasma surface treatments on the band-bending of ultrathin ALD-Al<sub>2</sub>O<sub>3</sub> coated Ga-polar GaN," *Journal of Applied Physics*, 135, 115303 (2024) DOI: 10.1063/5.0188768
31. H. Chang, Y. Jia, T.-Y. Park, X. Zhang, Q. Gan, **Z. Ma**, T. K. Ng, and B. S. Ooi, "Semiconductor membrane exfoliation: technology and application," *Advanced Electronic Materials*, (review) accepted.
32. J. Zhou, M. Sheikhi, A. Dheenan, H. Abbasi, J. Gong, Y. Liu, G. Adamo, P. Marshall, N. Wriedt, C. Cheung, S. Qiu, T. K. Ng, Q. Gan, V. Gambin, B. S. Ooi, S. Rajan, and **Z. Ma**, "Demonstration of a monocrystalline GaAs-β-Ga<sub>2</sub>O<sub>3</sub> p-n heterojunction," *arXiv: 2310.03886* (2023)
33. J. Zhou, A. Dheenan, J. Gong, C. Adamo, P. Marshall, M. Sheikhi, T.-H. Tsai, N. Wriedt, C. Cheung, S. Qiu, T. K. Ng, Q. Gan, G. Vincent, B. S. Ooi, S. Rajan, and **Z. Ma**, "Initial demonstration of AlGaAs-GaAsP-β-Ga<sub>2</sub>O<sub>3</sub> n-p-n double heterojunctions," *arXiv: 2308.06575v1* and *arXiv: 2308.06575v2* (2023).

34. S. Xie, Q. Lin, J. Gong, MD T. Alam, M. Sheikhi, J. Zhou, F. Alema, A. Osinsky, S. S. Pasayat, **Z. Ma**, and C. Gupta, "0.86 kV p-Si/(001)-Ga<sub>2</sub>O<sub>3</sub> heterojunction diode," *IEEE Electron Device Letters*, 45(3) 444-447 (2024). DOI: 10.1109/LED.2024.3352515
35. J. Lee, S. H. Kim, H. Zhang, S. Min, G. Choe, **Z. Ma**, and Y. H. Jung, "Design and fabrication of stretchable microwave transmission lines based on a quasi-microstrip structure," *ACS Applied Materials & Interfaces*, 16, 4896-4903, (2024). DOI: 10.1021/acsami.3c14493
36. I.-K. Lee, R. Xie, A. Luz-Madrigal, S. Min, J. Zhu, J. Jin, K. L. Edwards, M. J. Phillips, A. L. Ludwig, D. M. Gamm, S. Gong, and **Z. Ma**, "Micromolded honeycomb scaffold design to support the generation of a bilayered RPE and Photoreceptor cell construct," *Bioactive Materials*, 30, 142-153 (2023). DOI: 10.1016/j.bioactmat.2023.07.019
37. J. Gong, D. Kim, H. Jang, F. Alema, Q. Wang, T. K. Ng, S. Qiu, J. Zhou, Q. Lin, R. Singh, X. Su, H. Abbasi, K. Chabak, G. Jessen, C. Cheung, V. Gambin, S. S. Pasayat, A. Osinsky, B. S. Ooi, C. Gupta, and **Z. Ma**, "Monocrystalline Si/ $\beta$ -Ga<sub>2</sub>O<sub>3</sub> p-n heterojunction diodes fabricated via grafting," *arXiv:2305.19138* (2023).
38. S. Qiu, J. Gong, J. Zhou, T. K. Ng, R. Singh, M. Sheikhi, B. S. Ooi, and Z. Ma, "Interfacial band parameters of the ultrathin ALD-ZrO<sub>2</sub> on the Ga-polar GaN through XPS measurements," *AIP Advances* 13, 055110 (2023). DOI: 10.1063/5.0145286 **Editor's pick**.
39. R. Vidrio, D. Vincent, B. Bachman, C. Saucedo, M. Zahedian, Z. Xu, T. Grotjohn, S. Kolkowitz, J. Lai, J.-H. Seo, R. J. Hamers, K. R. George, **Z. Ma**, and J. T. Choy, "Effects of molecular contamination and sp<sup>2</sup> carbon on oxidation of (100) single-crystal diamond surfaces," <https://arxiv.org/abs/2304.02217>
40. J. Gong, J. Zhou, P. Wang, T.-H. Kim, K. Lu, S. Min, R. Singh, M. Sheikhi, H. N. Abbasi, D. Vincent, D. Wang, N. Campbell, T. Grotjohn, M. Rzechowski, J. Kim, E. T. Yu, Z. Mi, and **Z. Ma**, "Synthesis and Characteristics of Transferrable Single-Crystalline AlN Nanomembranes," *Advanced Electronic Materials*, 2201309 (2023). DOI: 10.1002/aelm.202201309.
41. S. Qiu, H. Zhang, Q. Yan, L. Katehi, S. Gong, Z. Cai, and **Z. Ma**, "Flexible lumped microwave passive components and filters on cellulose nanofibril substrates," *IEEE Journal of Microwaves*, 3, 96-101 (2023). DOI: 10.1109/JMW.2022.3206715
42. J. Gong, Z. Zheng, D. Vincent, J. Zhou, J. Kim, D. Kim, T. K. Ng, B. S. Ooi, K. J. Chen, and **Z. Ma**, "Interfacial band parameters of ultrathin ALD-Al<sub>2</sub>O<sub>3</sub>, ALD-HfO<sub>2</sub>, and PEALD-AlN/ALD-Al<sub>2</sub>O<sub>3</sub> on c-plane, Ga-face GaN through XPS measurements," *Journal of Applied Physics*, 132, 135302 (2022). DOI: 10.1063/5.0106485
43. J. Kim, W. Lin, J. Gong, S. Lal, D. Vincent, S. Cho, D. Kim, and **Z. Ma**, "Low contact-resistivity and high-uniformity Ni/Au Ohmic contacts on p<sup>+</sup> Si nanomembranes via low-temperature rapid thermal annealing," *Materials Science for Semiconductor Processing*, 151, 106988 (2022). DOI: 10.1016/j.mssp.2022.106988
44. C. Chen, Y. Zhou, W. Xie, T. Meng, X. Zhao, Z. Pang, Q. Chen, D. Liu, R. Wang, V. Yang, H. Zhang, H. Xie, U. H. Leiste, W. L. Fourny, S. He, Z. Cai, **Z. Ma**, T. Li, and L. Hu, "Lightweight, thermally insulating, fire-proof graphite-cellulose foam," *Advanced Functional Materials*, 2204219, (2022). DOI: 10.1002/adfm.202204219

45. X. Yang, J. Liu, Z. Huang, **Z. Ma**, and G. Qin, "Investigation of effective stress imposed on flexible single-crystalline semiconductor nanomembrane electronics under bending conditions," *Modern Physics Letters B*, 36, 2250030 (2022).
46. T.-L. Liu, Y. Dong, S. Chen, J. Zhou, **Z. Ma**, and J. Li, "Battery-free, tuning circuit inspired wireless sensor systems for detection of multiple biomarkers in bodily fluids," *Science Advances*, 8, eabo7049 (2022). DOI: 10.1126/sciadv.abo7049
47. D.-W. Park, G. Tsvaid, J. P. Hernandez-Ortiz, D. C. Schwartz, and **Z. Ma**, "Trench field-effect transistors integrated in a microfluidic channel and design considerations for charge detection," *Applied Physics Letters*, 120, 192102 (2022). DOI: 10.1063/5.0084758 **Editor's Pick**.
48. G. Qin, Y. H. Jung, H. Zhang, N. Jiang, P. Ma, S. Stetson, M. Racanelli, and **Z. Ma**, "Microwave flexible electronics directly transformed from foundry-produced, multilayered monolithic integrated circuits," *Advanced Electronic Materials*, 2101350 (2022). DOI: 10.1002/aelm.202101350
49. Y. Wei, K. Lan, Z. Wang, J. Wei, Z. Ma, and G. Qin, "Investigation on the performance dependence of proton radiated SiGe HBTs with emitter area and temperature," *Modern Physics Letter B*, 36(03), 2150559 (2022). DOI: 10.1142/S021798492150559X
50. J. Gong, J. Kim, T. K. Ng, K. Lu, D. Kim, J. Zhou, D. Liu, J. Kim, B. S. Ooi, and **Z. Ma**, "Influences of ALD Al<sub>2</sub>O<sub>3</sub> on the surface band-bending of c-plane, Ga-face GaN and the implication to GaN-collector npn heterojunction bipolar transistors," *arXiv:2109.04597*.
51. J. Gong, K. Lu, J. Kim, T. K. Ng, D. Kim, J. Zhou, D. Liu, J. Kim, B. S. Ooi, and **Z. Ma**, "Influences of ALD Al<sub>2</sub>O<sub>3</sub> on the surface band-bending of c-plane, Ga-face GaN," *Japanese Journal of Applied Physics*, 61, 011003 (2022). DOI: 10.35848/1347-4065/ac3d45
52. J. Park, J. Bong, Y. H. Jung, J. Kegel, B. Liu, A. J. Suminski, S. K. Brodnick, H. Jang, Z. Yu, J. C. Williams, and Z. Ma, "Design and fabrication of blue LED-integrated graphene electrodes for neural stimulation and signal recording," *ACS Applied Electronic Materials*, 3, 4308–4316 (2021). DOI: 10.1021/acsaelm.1c00440
53. C. Chen, C. Li, S. Min, Q. Guo, Z. Xia, D. Liu, **Z. Ma**, and F. Xia, "Ultrafast silicon nanomembrane microbolometer for long-wavelength infrared light detection," *Nano Letters*, DOI: 10.1021/acs.nanolett.1c02972.
54. X. Huang, K. Lan, J. Wei, Z. Wang, **Z. Ma**, and G. Qin, "Investigation on dark current and photoresponsivity of flexible single-crystal semiconductor photodetectors on plastic substrates," *Journal of Physics D: Applied Physics*, accepted.
55. X. Yang, K. Lan, Z. You, **Z. Ma**, G. Qin, "On the operation mechanism of the flexible microwave inductor and capacitor under mechanical bending conditions," *Journal of Physics D: Applied Physics*, accepted.
56. F. Yasar, M. Kilin, S. Dehdashti, Z. Yu, **Z. Ma**, and Z. Wang, "Spatially resolved X-ray detection with photonic crystal scintillators," *Journal of Applied Physics*, 130, 043101 (2021). DOI: 10.1063/5.0050380

57. Z. Rao, Y. Lu, Z. Li, K. Sim, **Z. Ma**, J. Xiao, and C. Yu, “Curvy, shape adaptive imager based on conformal additive stamp printed ultrathin optoelectronic pixels with kirigami designs,” *Nature Electronics*. DOI: 10.1038/s41928-021-00600-1
58. K. Lan, F. Wang, Q. Zhang, **Z. Ma**, and G. Qin, “Performance prediction of bended radio-frequency capacitors and inductors on plastic substrates using artificial neural network,” *Modern Physics Letters B*, 35, 2150288 (2021).
59. I.-K. Lee, A. L. Ludwig, M. J. Phillips, J. Lee, R. Xie, S. Gong, D. M. Gamm, and **Z. Ma**, “Ultrathin micromolded 3D scaffolds for high-density photoreceptor layer reconstruction,” *Science Advances*, 7, eabf0344 (2021). DOI: 10.1126/sciadv.abf0344
60. H. Li, H. Zhang, S. Min, T. Zhou, S. Gong, X. Feng, and **Z. Ma**, “Hybrid liquid-metal heat dissipation structure enabled by phase transition for flexible electronics,” *Semiconductor Science and Technology*, 36, 055007 (2021). DOI: 10.1088/1361-6641/abed8c
61. Y. Lan, H. Zhang, S. Min, D. Kim, S. Gong, Y. Xu, and **Z. Ma**, “S- to X-Band stretchable inductors and filters for soft and epidermal wireless applications,” *ACS Applied Materials and Interfaces*, DOI: 10.1021/acsami.0c22003
62. M. Zhou, H. Song, X. Xu, A. Shahsafi, Y. Qu, Z. Xia, **Z. Ma**, M. Kats, J. Zhu, B. S. Ooi, Q. Gan and Z. Yu, “Vapor condensation with daytime radiative cooling,” *Proceedings of the National Academy of Sciences*, 118, e2019292118 (2021). DOI: 10.1073/pnas.2019292118.
63. Z. You, H. Liu, Y. Xu, **Z. Ma**, and G. Qin, “A flexible monolithic integrated silicon low noise amplifier on plastic substrate,” *Journal of Physics D: Applied Physics*, 54, 11LT01 (2021).
64. Z. Fang, H. Zhang, S. Qiu, Y. Kuang, J. Zhou, Y. Lan, C. Sun, G. Li, and **Z. Ma**, “Versatile wood cellulose for biodegradable electronics,” *Advanced Materials Technology*, 2000928 (2021). DOI: 10.1002/admt.202000928
65. S. J. Cho, D. Liu, A. Hardy, J. Kim, J. Gong, C. J. Herrera-Rodriguez, E. Swinnich, X. Konstantinou, G.-Y. Oh, D. G. Kim, J. C. Shin, J. Papapolymerou, M. Becker, J.-H. Seo, J. D. Albrecht, T. Grotjohn, and **Z. Ma**, “Fabrication of AlGaAs/GaAs/diamond heterojunctions for diamond-collector HBTs,” *AIP Advances*, 10, 125226 (2020) DOI: 10.1063/5.0027864
66. H. Zhang, Y. Lan, S. Qiu, S. Min, H. Jang, J. Park, S. Gong, and **Z. Ma**, “Microwave flexible and stretchable electronics: Past, present and future prospects,” (Invited Review, Hall of Fame Article) *Advanced Materials Technologies*, 2000759 (2020). DOI: 10.1002/admt.202000759
67. J. Liu, X. Yang, **Z. Ma**, and G. Qin, “On the operation mechanism of the flexible diodes under mechanical bending conditions,” *Journal of Physics D: Applied Physics*, 53 45LT01 (2020).
68. K. Kim, T. J. Kim, H. Zhang, D. Liu, Y. H. Jung, J. Gong, and **Z. Ma**, “AlGaN/GaN Schottky-gate HEMTs with UV/O<sub>3</sub>-treated gate interface,” *IEEE Electron Device Letters*, 41(10), 1488-1491 (2020). DOI: 10.1109/LED.2020.3019339 (**Editor’s Pick and Semifinalist of 2020 George E. Smith Award**)
69. **Z. Ma**, “An aquatic-eye inspired miniature camera,” *Nature Electronics*, 3, 510-511 (2020). DOI: 10.1038/s41928-020-00477-6

70. R. M. Jacobberger, V. Thapar, G.-P. Wu, T.-H. Chang, V. Saraswat, A. J. Way, K. R. Jinkins, **Z. Ma**, P. F. Nealey, S.-M. Hur, S. Xiong, and M. S. Arnold, "Boundary-directed epitaxy of block copolymers," *Nature Communications*, 11:4151 (2020). DOI: 10.1038/s41467-020-17938-3
71. Y. Lan, Y. Yang, Y. Wang, H. Huo, L. Jiang, Y. Wu, Z. Cao, Y. Guo, Y. Wu, B. Yan, R. Xu, Y. Chen, Y. Li, S. Lal, **Z. Ma**, and Y. Xu, "High-temperature annealed flexible carbon nanotube network transistors for high-frequency wearable wireless electronics," *ACS Applied Materials & Interfaces*, 12, 26145–26152 (2020). DOI: 10.1021/acsami.0c03810
72. X. Yin, Y. Wang, T.-H. Chang, P. Zhang, J. Li, P. Xue, Y. Long, J. L. Shohet, P. M. Voyles, **Z. Ma**, and X. D. Wang, "Memristive behavior enabled by amorphous-crystalline two dimensional oxide heterostructure," *Advanced Materials*, 2000801 (2020). DOI: 10.1002/adma.202000801
73. Y. Wang, P. K. Shahi, R. Xie, H. Zhang, A. Abdeen, N. Yodsanit, **Z. Ma**, K. Saha, B. R. Pattnaik, and S. Gong, "A pH-responsive silica-metal-organic framework hybrid nanoparticle for the delivery of hydrophilic drugs, nucleic acids, and CRISPR-Cas9 genome-editing machineries," *Journal of Controlled Release*, 324, 194-203 (2020) DOI: 10.1016/j.jconrel.2020.04.052.
74. H. Zhang, J. Li, D. Liu, T.-H. Chang, K. Xiong, S. H. Park, Y. H. Jung, J. Park, J. Lee, J. Han, L. Katehi, Z. Cai, S. Gong, and **Z. Ma**, "Heterogeneously integrated flexible microwave amplifier on a cellulose nanofibril substrate," *Nature Communications*, 11, 3118 (2020). DOI: 10.1038/s41467-020-16957
75. K. Kim, J. Kim, J. Gong, D. Liu., and **Z. Ma**, "Metal-Al<sub>2</sub>O<sub>3</sub>-GaN capacitors with an ultraviolet/ozone plasma-treated interface," *Japanese Journal of Applied Physics*, 59, 030908 (2020).
76. H. Kim, A. M. Dingle, J. P. Ness, D.-H. Baek, J. Bong, I.-K. Lee, N. O. Shulzhenko, W. Zeng, J. S. Israel, J. A. Pisaniello, A. X.T. Millevolte, D.-W. Park, A. J. Suminski, Y. H. Jung, J. C. Williams, S. O. Poore, and **Z. Ma**, "Cuff and sieve electrode (CASE): the combination of neural electrodes for bi-directional peripheral nerve interfacing," *Journal of Neuroscience Methods*, 336, 108602 (2020). DOI: 10.1016/j.jneumeth.2020.108602
77. J. Bong, O. Yasin, V. Vaidya, J. Park, Z. Attia, D. Padmanabhan, R. Asirvatham, N. Schneider, S. J. Cho, J. Lee, P. Friedman, and **Z. Ma**, "Injectable flexible subcutaneous electrode array technology for electrocardiogram monitoring device," *ACS Biomaterials Science & Engineering*, 6, 2652-2658, (2020). DOI: 10.1021/acsbiomaterials.9b01102
78. A. P. K. Kalapala\*, D. Liu\*, S. J. Cho\*, J. Park\*, D. Zhao, J. D. Albrecht, B. Moody, **Z. Ma**, and W. Zhou, "Optically pumped room temperature low threshold deep UV lasers grown on native AlN substrates," *Opto-Electronic Advances*, 3, 190025 (2020). DOI: 10.29026/oea.2020.190025 (Cover).
79. X. Shi, S. Chen, H. Zhang, J. Jiang, **Z. Ma**, and S. Gong, "Portable self-charging power system via integration of a flexible paper-based triboelectric nanogenerator and supercapacitor," *ACS Sustainable Chemistry & Engineering*, 7, 18657 - 18666 (2019).
80. K. Kim, D. Liu, J. Gong, and **Z. Ma**, "Reduction of leakage current in GaN Schottky diodes through ultraviolet/ozone plasma treatment," *IEEE Electron Device Letters*, 40, 1796-1799 (2019). DOI: 10.1109/LED.2019.2944353

81. D. Liu\*, S. J. Cho\*, H. Zhang, C. R. Carlos, A. P. K. Kalapala, J. Park, J. Kim, R. Dalmau, J. Gong, B. Moody, X. D. Wang, J. D. Albrecht, W. Zhou, and **Z. Ma**, “Influences of screw dislocations on electroluminescence of AlGaIn/AlIn-based UVC LEDs,” *AIP Advances*, 9, 085128 (2019). DOI: 10.1063/1.5108743
82. J. Bong, J. P. Ness, W. Zeng, H. Kim, J. Novello, J. Pisaniello, W. B. Lake, K. A. Ludwig, J. C. Williams, **Z. Ma**, and A. J. Suminski, “Flexible, multichannel cuff electrode for selective electrical stimulation of the mouse trigeminal nerve,” *Biosensors and Bioelectronics*, 142, 111493 (2019). DOI: 10.1016/j.bios.2019.111493
83. H. Hong, Y. H. Jung, J. S. Lee, C. Jeong, J. U. Kim, S. Lee, H. Ryu, H. Kim, **Z. Ma**, and T.-I. Kim, “Anisotropic thermal conductive composite by the guided assembly of boron nitride nanosheets for flexible and stretchable electronics,” *Advanced Functional Materials*, DOI: 10.1002/adfm.201902575
84. H.-C. Huang, M. Kim, X. Zhan, K. Chabak, J. D. Kim, A. Kvit, D. Liu, **Z. Ma**, J.-M. Zuo, and X. Li, “High aspect ratio  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> fin arrays with low interface charge density by inverse metal-assisted chemical etching,” *ACS Nano*, 13, 8784-8792 (2019). DOI: 10.1021/acsnano.9b01709
85. T. J. Kim, K. L. Davis, Y. Liu, J. R. Bredemann, **Z. Ma**, M. Anderson, and M. Corradini, “Development of a stable high temperature diamond thermistor using enhanced supporting design,” *IEEE Sensors Journal*, 19(16), 6587-6594 (2019). DOI: 10.1109/JSEN.2019.2912566
86. J. Bong, Z. I. Attia, V. R. Vaidya, Y. H. Jung, D. Padmanabhan, J. Lee, H. Kim, D. J. Ladewig, P. A. Noseworthy, S. J. Asirvatham, D.-W. Park, Paul A. Friedman, and **Z. Ma**, “Radiolucent implantable electrocardiographic monitoring device based on graphene,” *CARBON*, 152, 946-953 (2019). DOI: 10.1016/j.carbon.2019.06.069
87. S. J. Cho\*, D. Liu\*, J.-H. Seo\*, R. Dalmau, K. Kim, J. Park, J. Gong, D. Zhao, F. Wang, X. Yin, Y. H. Jung, I.-K. Lee, M. Kim, X. D. Wang, W. Zhou, J. D. Albrecht, B. Moody, and **Z. Ma**, “P-type silicon as hole supplier for nitride-based UVC LEDs,” *New Journal of Physics*, 21, 023011 (2019). DOI: 10.1088/1367-2630/ab0445
88. C. Liu, Z. Wang, H. Lu, Y.-M. Zhang, D. Liu, Y. Zhang, **Z. Ma**, J. Zhao, L. Guo, and K. L. Xiong, “Atomic-layer-deposited HfO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub> laminated dielectrics for bendable Si nanomembrane based MOS capacitors,” *Applied Physics Letters*, 114, 142903 (2019).
89. M. Shokouejad, D.-W. Park, Y. H. Jung, S. Brodnick, J. Novello, A. Dingle, K. Swanson, D.-H. Baek, A. Suminski, W. Lake, **Z. Ma**, J. Williams, “Review Paper: Progress in the Field of Micro-Electrocorticography,” *Micromachines*, 10, 62 (2019). DOI: 10.3390/mi10010062
90. D. Liu\*, S. J. Cho\*, J.-H. Seo\*, K. Kim, M. Kim, J. Shi, X. Yin, W. Choi, C. Zhang, J. Kim, M. A. Baboli, J. Park, J. Bong, I.-K. Lee, J. Gong, H. Zhang, S. Mikael, J. H. Ryu, P. K. Mohseni, X. Li, S. Gong, X. D. Wang, and **Z. Ma**, “Lattice-mismatched semiconductor heterostructures,” <http://arxiv.org/abs/1812.10225>.
91. X. Chen, L. German, J. Bong; Y. Yu, M. Starr, Y. Qin, **Z. Ma**, and X. D. Wang, “Decoupling the charge collecting and screening effects in piezotronics-regulated photoelectrochemical systems by using graphene as the charge collector,” *Nano Energy*, 48, 377-382, (2018). DOI: 10.1016/j.nanoen.2018.03.066



92. Q. Zheng, R. Xie, L. Fang, Z. Cai, **Z. Ma**, and S. Gong, “Oxygen-deficient and nitrogen-doped MnO<sub>2</sub> nanowire-reduced graphene oxide-cellulose nanofibril aerogel electrodes for high-performance asymmetric supercapacitors,” *Journal of Materials Chemistry A*, 6, 24407, (2018). DOI: 10.1039/C8TA09374A
93. Q. Zheng, R. Xie, L. Fang, Z. Cai, **Z. Ma**, and S. Gong, “Oxygen-deficient and nitrogen-doped MnO<sub>2</sub> nanowire-reduced graphene oxide-cellulose nanofibril aerogel electrodes for high-performance asymmetric supercapacitors,” *Journal of Materials Chemistry A*, 6, 24407, (2018). DOI: 10.1039/C8TA09374A
94. Y. H. Jung, H. Zhang, I.-K. Lee, J. H. Shin, T.-I. Kim and **Z. Ma**, “Releasable high-performance GaAs Schottky diodes for gigahertz operation of flexible bridge rectifier,” *Advanced Electronic Materials*, 1800772 (2018). DOI: 10.1002/aelm.201800772
95. R. Wang, Q. Ma, H. Zhang, **Z. Ma**, R. Yang, and J. Y. Zhu, “Producing conductive graphene–nanocellulose paper in one-pot,” *Journal of Polymers and The Environment*, 27, 148-157 (2019). DOI: 10.1007/s10924-018-1330-4
96. M. M. Hussain, **Z. Ma** and S. F. Shaikh, “Flexible and stretchable electronics – progress, challenges, and prospects,” *Interface*, winter, 67-71, (2018).
97. H. Kim, I.-K. Lee, K. Taylor, K. Richters, D.-H. Baek, J. H. Ryu, S. J. Cho, Y. H. Jung, D.-W. Park, J. Novello, J. Bong, A. J. Suminski, A. M. Dingle, R. H. Blick, J. C. Williams, E. W. Dent, and **Z. Ma**, “Single-neuronal cell culture and monitoring platform using a fully transparent microfluidic DEP device,” *Scientific Reports*, 8, 13194 (2018). DOI: 10.1038/s41598-018-31576-2
98. Y. H. Jung, M. J. Phillips, J. Lee, R. Xie, A. L. Ludwig, G. Chen, Q. Zheng, T. J. Kim, H. Zhang, P. Barney, J. Min, K. Barlow, S. Gong, D. M. Gamm, and **Z. Ma**, “Three-dimensional micro-structured scaffolds to support photoreceptor polarization and maturation,” *Advanced Materials*, 1803550 (2018). DOI: 10.1002/adma.201803550
99. D. Liu\*, S. J. Cho\*, J. Park\*, J. Gong, J.-H. Seo, R. Dalmau, D. Zhao, K. Kim, M. Kim, A. R. K. Kalapala, J. D. Albrecht, W. Zhou, B. Moody, and **Z. Ma**, “226 nm AlGaN/AlN UV LEDs using p-type Si for hole injection and UV reflection,” *Applied Physics Letters*, 113, 011111 (2018). DOI: 10.1063/1.5038044
100. S.-C. Liu, D. Zhao, X. Ge. C. Reuterskiöld-Hedlund, M. Hammar, S. Fan, **Z. Ma**, and W. Zhou, “Lateral size scaling of photonic crystal surface emitting lasers on silicon substrates,” *Photonics Journal*, 10, 1-6 (2018).
101. M. Kim, S. Yi, J. D. Kim, X. Yin, J. Li, J. Bong, D. Liu, S.-C. Liu, A. Kvit, W. Zhou, X. D. Wang, Z. Yu, **Z. Ma**, and X. Li, “Enhanced performance of Ge photodiodes via monolithic antireflection texturing and □-Ge self-passivation by inverse metal-assisted chemical etching,” *ACS Nano*, 12, 6748-6755 (2018). DOI: 10.1021/acsnano.8b01848
102. M. Zhou, H. Song, X. Xu, A. Shahsafi, Z. Xia, **Z. Ma**, M. Kats, J. Zhu, B. S. Ooi, Q. Gan and Z. Yu, “Accelerating vapor condensation with daytime radiative cooling,” arXiv:1804.10736v3. <https://arxiv.org/ftp/arxiv/papers/1804/1804.10736.pdf>

103. C. Liu, H. Lü, T. Yang, Y. Zhang, Y. Zhang, D. Liu, **Z. Ma**, W. Yu, and L. Guo, "Ultrathin ZnO interfacial passivation layer for atomic layer deposited ZrO<sub>2</sub> dielectric on the p-In<sub>0.2</sub>Ga<sub>0.8</sub>As substrate," *Applied Surface Science*, 444, 474-479, (2018).
104. F. Yasar, W. Fan and **Z. Ma**, "Flexible amorphous GeSn MSM photodetectors," *IEEE Photonics Journal*, 10, 1 - 9, (2018). DOI: 10.1109/JPHOT.2018.2804360.
105. D. Liu\*, S. J. Cho\*, J. Park\*, J.-H. Seo, R. Dalmau, D. Zhao, K. Kim, M. Kim, I.-K. Lee, J. D. Albrecht, W. Zhou, B. Moody, and **Z. Ma**, "229 nm UV LEDs on aluminum nitride single crystal substrates using p-type silicon for increased hole injection," *Applied Physics Letters*, 112, 081101 (2018). DOI: 10.1063/1.5011180.
106. T. J. Kim\*, Y. H. Jung\*, H. Zhang, K. Kim, J. Lee, and **Z. Ma**, "Photolithography-based nano-patterning using re-entrant photoresist profile," *ACS Applied Materials and Interfaces*, 10, 8117-8123 (2018). DOI: 10.1021/acsami.7b17628.
107. H. Mi, S. Mikael, J.-H. Seo, T. Allen, K. Sridharan, D. P. Butt, S. Gong, S. M. McDevitt, J. P. Blanchard, and **Z. Ma**, "Detecting the oxidation of zircaloy claddings by infrared interference," *Nano*, 13(02) 1850015 (2018). DOI: 10.1142/S1793292018500157
108. D.-W. Park\*, J. P. Ness\*, S. K. Brodnick, C. Esquibel, J. Novello, F. Atry, D.-H. Baek, H. Kim, J. Bong, K. I. Swanson, A. J. Suminski, K. J. Otto, R. Pashaie, J. C. Williams and **Z. Ma**, "Electrical neural stimulation and simultaneous in vivo monitoring with transparent graphene electrode arrays implanted in GCaMP6f mice," *ACS Nano*, 12, 148-157, (2018). DOI: 10.1021/acsnano.7b04321
109. K. Xiong, H. Mi, T.-H. Chang, Z. Xia, D. Liu, M.-Y. Wu, X. Yin, S. Gong, W. Zhou, J. C. Shin, X. Li, M. Arnold, X. Wang, H.-C. Yuan and **Z. Ma**, "AlGaAs/Si dual-junction tandem solar cells by epitaxial lift-off and print transfer-assisted direct bonding," *Energy Science and Engineering*, 6, 47-55, (2018). DOI: 10.1002/ese3.182. **"One of the journal's top 20 most downloaded recent papers"**
110. M. E. Robinson, J. D. Ng, H. Zhang, J. T. Buchman, O. A. Shenderova, C. L. Haynes, **Z. Ma**, R. H. Goldsmith, and R. J. Hamers, "Optically detected magnetic resonance for selective imaging of diamond nanoparticles," *Analytical Chemistry*, 90, 769-776 (2018). DOI: 10.1021/acs.analchem.7b03157.
111. M. Kim, S. J. Cho, H. Mi, S. Mikael, J. U. Yoon and **Z. Ma**, "Fabrication of Ge-on-insulator wafers by Smart-Cut™ with thermal management for undamaged donor Ge wafers," *Semiconductor Science and Technology*, 33, 015017 (2018).
112. K. Kim, M. Hua†, D. Liu†, J. Kim, K. J. Chen and **Z. Ma**, "Efficiency enhancement of InGaN/GaN blue LEDs with top surface deposition of AlN/Al<sub>2</sub>O<sub>3</sub>," *Nano Energy*, 43, 259-269 (2018). <http://dx.doi.org/10.1016/j.nanoen.2017.11.047>.
113. K. Zhang\*, Y. H. Jung\*, S. Mikael\*, J.-H. Seo, H. Mi, H. Zhou, S. Gong and **Z. Ma**, "Origami silicon optoelectronics for hemispherical electronic eye systems," *Nature Communications*, 8, 1782 (2017).

114. S.-C. Liu, D. Zhao, Y. Liu, H. Yang, **Z. Ma**, C. Reuterskiöld-Hedlund, M. Hammar, W. Zhou, “Photonic crystal bandedge membrane lasers on silicon”, *Applied Optics*, 56, H67-H73 (2017).
115. J.-H. Seo\*, K. Zhang\*, M. Kim, W. Zhou and **Z. Ma**, “High-performance flexible BiCMOS electronics based on single-crystal Si nanomembrane,” *npj Flexible Electronics*, 1, 1 (2017). doi:10.1038/s41528-017-0001-1
116. M.-Y. Wu, J. Zhao, N. J. Curley, T.-H. Chang, **Z. Ma**, and M. S. Arnold, “Biaxially stretchable carbon nanotube transistors,” *Journal of Applied Physics*, 122, 124901 (2017).
117. D. Liu\*, S. J. Cho\*, J. Park\*, J.-H. Seo, R. Dalmau, D. Zhao, K. Kim, M. Kim, I.-K. Lee, J. D. Albrecht, W. Zhou, B. Moody and Z. Ma, “229 nm UV LEDs using p-type silicon for increased hole injection,” <http://arxiv.org/abs/1708.03973> (2017).
118. Z. Xia\*, K. Zang\*, D. Liu, M. Zhou, T.-J. Kim, H. Zhang, M. Xue, J. Park, M. Morea, J. H. Ryu, T.-H. Chang, J. Kim, S. Gong, T. I. Kamins, Z. Yu, Z. Wang, J. S. Harris and **Z. Ma**, “High-sensitivity silicon ultraviolet p<sup>+</sup>-i-n avalanche photodiode by using ultra-shallow boron gradient doping,” *Applied Physics Letters*, 111, 081109 (2017).
119. J. Lee\*, D. Lee\*, S. J. Cho\*, J.-H. Seo, D. Liu, C.-B. Eom and **Z. Ma**, “Epitaxial VO<sub>2</sub> thin film-based radio-frequency switches with thermal activation,” *Applied Physics Letters*, 111, 063110 (2017).
120. D. Lee\*, J. Lee\*, K. Song, F. Xue, S.-Y. Choi, Y. Ma, J. Podkaminer, D. Liu, S.-C. Liu, B. Chung, W. Fan, W. Zhou, J. Lee, L.-Q. Chen, S. H. Oh, **Z. Ma** and C.-B. Eom, “Sharpened VO<sub>2</sub> phase transition via controlled release of epitaxial strain” *Nano Letters*, 17, 5614-5619, (2017). DOI: 10.1021/acs.nanolett.7b02482.
121. J. Lee\*, D. Lee\*, S. J. Cho, J.-H. Seo, D. Liu, C.-B. Eom and **Z. Ma**, “Epitaxial VO<sub>2</sub> thin film-based radio-frequency switches with electrical activation,” *Applied Physics Express*, 10, 091101 (2017).
122. S. J. Cho\*, D. Liu\*, J.-H. Seo\*, R. Dalmau, K. Kim, J. Park, D. Zhao, X. Yin, Y. H. Jung, I.-K. Lee, M. Kim, X. D. Wang, J. D. Albrecht, W. Zhou, B. Moody and **Z. Ma**, “UVC LEDs on bulk AlN substrates using silicon nanomembranes for efficient hole injection,” <http://arxiv.org/abs/1707.04223> (2017).
123. T.-H. Chang, K. Xiong, S. H. Park, , G. Yuan, **Z. Ma** and J. Han, “Strain balanced AlGaIn/GaN/AlGaIn nanomembrane HEMTs,” *Scientific Reports*, 7, 6360 (2017). DOI: 10.1038/s41598-017-06957-8.
124. M. Dang, H.-C. Yuan, **Z. Ma**, J. Ma, and G. Qin, “The fabrication and characterization of flexible single-crystalline silicon and germanium p-intrinsic-n photodetectors on plastic substrates,” *Applied Physics Letters*, 110, 253104 (2017).
125. T.-H. Chang, S. Xiong, C.-C. Liu, D. Liu, P. F. Nealey and **Z. Ma**, “The one-pot directed assembly of cylinder-forming block copolymer on adjacent chemical patterns for bimodal patterning,” *Macromolecular Rapid Communications*, 1700285 (2017). DOI:10.1002/marc.201700285

126. M. Kim, J.-H. Seo, J. Singiseti and **Z. Ma**, “Recent advances in free-standing single crystalline wide band-gap semiconductors and their applications: GaN, SiC, ZnO,  $\beta$ -Ga<sub>2</sub>O<sub>3</sub>, and diamond,” (**Invited Review**), *Journal of Materials Chemistry C*, 5, 8338-8354 (2017). DOI: 10.1039/C7TC02221B. (**Inside Front Cover**)
127. Z. Xia, H. Song, M. Kim, M. Zhou, T.-H. Chang, D. Liu, Y. Xin, K. Xiong, H. Mi, X. Wang, F. Xia, Z. Yu, **Z. Ma** and Q. Gan, “Single-crystalline germanium nanomembrane photodetectors on a foreign substrate,” *Science Advances*, 3, e1602783 (2017).
128. Y. Tang, Q. Zheng, B. Chen, **Z. Ma** and S. Gong, “A new class of flexible generators consisting of porous aerogel films driven by mechanoradicals,” *Nano Energy*, 38, 401-411 (2017).
129. Q. Zheng, A. Kvit, Z. Cai, **Z. Ma**, and S. Gong, “A Freestanding cellulose nanofibril–reduced graphene oxide–molybdenum oxynitride aerogel film electrode for all-solid-state supercapacitors with ultrahigh energy density,” *Journal of Materials Chemistry A*, 5, 12528-12541 (2017). DOI: 10.1039/C7TA03093B.
130. K. Kim, J. H. Ryu, J. Kim, S. J. Cho, D. Liu, J. Park, I.-K. Lee, B. Moody, W. Zhou, J. Albrecht and **Z. Ma**, “Band-bending of Ga-Polar GaN interfaced with Al<sub>2</sub>O<sub>3</sub> through ultraviolet/ozone treatment,” *ACS Applied Materials & Interfaces*, 9, 17576, (2017). DOI: 10.1021/acsami.7b01549.
131. Y. H. Jung, H. Zhang, S. Gong and **Z. Ma**, “High-performance green semiconductor devices: materials, designs, and fabrication,” *Semiconductor Science and Technology*, (**Invited Review**), 32, 063002, (2017).
132. Z. Derafshi, B. E. Kunzer, E. M. Mugler, N. Rokhmanova, D.-W. Park, H. Tajalli, K. Shetty, **Z. Ma**, J. C. Williams, J. R. Hetling, “Corneal potential maps measured with multi-electrode electroretinography in rat eyes with experimental lesions,” *Investigative Ophthalmology and Visual Science*, 58, 2863-2873 (2017).
133. B. Corbett, R. Loi, W. Zhou, D. Liu and **Z. Ma**, “Transfer print techniques for heterogeneous integration of photonic components”, (**Invited Review**) *Progress in Quantum Electronics*, 52, 1-17, (2017).
134. H. Mi, H.-C. Yuan, J.-H. Seo, O. H. Auciello, D. C. Mancini, R. W. Carpick, S. P. Pacheco, A. V. Sumant and **Z. Ma**, “On the integration of ultra-nanocrystalline diamond (UNCD) with CMOS chip,” *AIP Advances*, 7, 035121 (2017).
135. C. Liu, S. J. Cho, Y. H. Jung, T.-H. Chang, J.-H. Seo, S. Michael, Y. Zhang, Y. Zhang, H. Lu, L. Guo, H. Mi, H. Zhang and **Z. Ma**, “Bendable MOS capacitors formed with printed In<sub>0.2</sub>Ga<sub>0.8</sub>As/GaAs/In<sub>0.2</sub>Ga<sub>0.8</sub>As trilayer nanomembrane on plastic substrates,” *Applied Physics Letters*, 110, 133505 (2017).
136. Y. H. Jung, H. Zhang, S. J. Cho and **Z. Ma**, “Flexible and stretchable microwave microelectronic devices and circuits” *IEEE Transactions on Electron Devices*, (**Invited Review**) 64, 1881-1893, (2017).
137. M. Kim. J.-H. Seo, D. Zhao, S.-C. Liu, K. Lim, W. Zhou, E. Waks and **Z. Ma**, “Transferrable single crystalline 4H-SiC nanomembranes,” *Journal of Materials Chemistry C*, 5, 264 (2017).

DOI: 10.1039/C6TC04480H, **Inside Front Cover. Selected in the collection of “2016 Journal of Materials Chemistry C Hot papers”.**

138. M. Kim, J.-H. Seo, D. Zhao, S.-C. Liu, K. Lim, W. Zhou, E. Waks and **Z. Ma**, “Correction: Transferrable single crystalline 4H-SiC nanomembranes,” *Journal of Materials Chemistry C*, 5, 777 (2017).
139. J. Peng, H. Zhang, Q. Zheng, C. M. Clemons, R. C. Sabo, S. Gong, **Z. Ma** and L.-S. Turng, “A composite generator film impregnated with cellulose nanocrystals for enhanced triboelectric performance,” *Nanoscale*, 9, 1418 (2017).
140. D. R. Boris, **Z. Ma**, H.-C. Yuan, R. P. Ashley, J. F. Santarius, G. L. Kulcinski, C. Dickerson, and T. Allen, “;,” *Fusion Science and Technology*, 52(4), 1066-1069 (2017). DOI: 10.13182/FST07-A1637
141. Z. Li, C. Yao, Y.-C. Wang, S. Mikael, S. Gunasekaran, **Z. Ma**, Z. Cai and X. Wang, “High-density platinum nanoparticle-deposited titanium dioxide nanofiber networks for efficient capillary photocatalytic hydrogen generation,” *Journal of Materials Chemistry A*, 4, 11672, (2016).
142. D.-W. Park, H. Kim, J. Bong, S. Mikael, T. J. Kim, J. C. Williams and **Z. Ma**, “Flexible bottom-gate graphene transistors on Parylene C substrate and the effect of current annealing”, *Applied Physics Letters*, 109, 152105 (2016).
143. G. Qin, H. Liu, Y. Guo, M. Dang, J. Ma, **Z. Ma** and T. Luo, “On the performance characterization of silicon MOSFETs on 4° off-axis substrate,” *IEICE Electronics Express*, 13, 20160634 (2016).
144. G. Qin, H. Liu, Y. Xu, M. Dang, J. Ma, **Z. Ma**, X. Chen, and T. Luo, "Characterization of flexible radio-frequency spiral inductors on a plastic substrate," *IEICE Electronics Express*, 13, 20160690 (2016).
145. S. Mikael, D.-W. Park, J.-H. Seo, S. Gong and **Z. Ma**, “Triaxial compressive strain in bilayer graphene enabled by nitride stressor layer,” *Extreme Mechanics Letters*, 11, 77-83 (2016). <http://dx.doi.org/10.1016/j.eml.2016.09.002>
146. X. Huang, Y. Liu, G. W. Kong, J.-H. Seo, Y. Ma, K.-I. Jang, J. A. Fan, S. Mao, Q. Chen, D. Li, H. Liu, C. Wang, D. Patnaik, L. Tian, G. Salvatore, X. Feng, **Z. Ma**, Y. Huang and J. A. Rogers, “Epidermal radio frequency electronics for wireless power transfer,” *Microsystems and Nanoengineering*, 2, 1605 (2016). <http://dx.doi.org/10.1038/micronano.2016.52> **Outstanding Paper Award, 08/08/2020.**
147. T.-H. Chang\*, S. Xiong\*, R. M. Jacobberger\*, S. Mikael, H. S. Suh, C.-C. Liu, D. Geng, X. Wang, M. S. Arnold, **Z. Ma** and P. F. Nealey, “Directed self-assembly of block copolymer films on atomically-thin graphene chemical patterns”, *Scientific Reports*, 6, 31407 (2016).
148. M. Kim, J.-H. Seo, Z. Yu, W. Zhou, and **Z. Ma**, “Flexible germanium nanomembrane metal-semiconductor-metal photodiodes,” *Applied Physics Letters*, 109, 051105 (2016). **Editor’s Pick.**
149. D.-W. Park, S. K. Brodnick, J. P. Ness, F. Atry, L. Krugner-Higby, A. Sandberg, S. Mikael, T. J. Richner, J. Novello, H. Kim, D.-H. Baek, J. Bong, S. T. Frye, S. Thongpang, K. I.

- Swanson, W. Lake, R. Pashaie, J. C. Williams and **Z. Ma**, “Fabrication and utility of a transparent graphene neural electrode array for electrophysiology, *in vivo* imaging, and optogenetics,” *Nature Protocols*, 11, 2201 - 2222 (2016). doi:10.1038/nprot.2016.127.
150. M. Kim, S. C. Liu, J. Lee, T. Kim, J.-H. Seo, W. Zhou and **Z. Ma**, “Light absorption enhancement in Ge nanomembranes and its optoelectronic application,” *Optics Express*, 24(15): 16894-16903 (2016).
151. T.-H. Chang, W. Fan, S. Liu, D. Liu, Z. Xia, L. Menon, H. Yang, J. Berggren, M. Hammar and **Z. Ma**, “Selective release of InP heterostructures from InP substrates,” *Journal of Vacuum Science and Technology B* 34, 041229 (2016).
152. D. Liu, W. Zhou and **Z. Ma**, “Semiconductor nanomembrane-based light-emitting and photo-detecting devices” (Invited Review), *Photonics* 3(2), 40 (2016).
153. M. Cho, J.-H. Seo, D. Park, W. Zhou and **Z. Ma**, “Capacitance-voltage characteristics of Si and Ge nanomembrane based flexible metal-oxide-semiconductor devices under bending conditions,” *Applied Physics Letters*, 108, 233505 (2016).
154. Q. Zheng, **Z. Ma** and S. Gong, “Multi-stimuli-responsive self-healing metallo-supramolecular polymer nanocomposites,” *Journal of Materials Chemistry C*, 4, 3324-3334 (2016).
155. Q. Zheng, H. Zhang, H. Mi, Z. Cai, **Z. Ma** and S. Gong, “High-performance flexible piezoelectric nanogenerators consisting of porous cellulose nanofibril (CNF)/poly (dimethylsiloxane) (PDMS) aerogel films,” *Nano Energy*, 26, 504-512, (2016).
156. F. Wang, J.-H. Seo, G. Luo, M. B. Starr, Z. Li, D. Geng, S. Wang, D. Morgan, **Z. Ma** and X. D. Wang, “Nanometer-thick single-crystalline nano-sheets grown at the water-air interface”, *Nature Communications*, 7, 10444 (2016).
157. D. Zhao, S. Liu, H. Yang, **Z. Ma**, C. Reuterskiöld-Hedlund, M. Hammar and W. Zhou, “Printed large-area single-mode photonic crystal bandedge surface-emitting lasers on silicon,” *Scientific Reports*, 6, 18860 (2016).
158. G. Gui, K. Zhang, J. P. Blanchard and **Z. Ma**, “Prediction of 4H-SiC betavoltaic microbattery characteristics based on practical Ni-63 sources,” *Applied Radiation and Isotopes*, 107, 272–277 (2016).
159. J.-H. Seo, T. Ling, W. Zhou, S. Gong, A. Ma, L. J. Guo and **Z. Ma**, “Fast flexible thin-film transistors with a nano-trench structure”, *Scientific Reports*, 6, 24771 (2016).
160. S. Mikael\*, J.-H. Seo\*, A. Javadi, S. Gong and **Z. Ma**, “Wrinkled bilayer graphene with wafer scale mechanical strain”, *Applied Physics Letters*, 108, 183101 (2016).
161. Y. H. Jung, J. Lee, Y. Qiu, N. Cho, S. J. Cho, H. Zhang, S. Lee, T. J. Kim, S. Gong and **Z. Ma**, “Stretchable twisted-pair transmission lines for microwave frequency wearable electronics,” *Advanced Functional Materials*, 26, 4636-4642 (2016). **(Inside Front Cover, significant press coverage)**

162. H. Mi, C. H. Liu, T.-H. Chang, J.-H. Seo, H. Zhang, S. J. Cho, N. Behdad, **Z. Ma**, C. Yao, Z. Cai and S. Gong, "Characterizations of biodegradable epoxy-coated cellulose nanofibrils (CNF) thin film for flexible microwave applications," *Cellulose* 23(3): 1989-95 (2016).
163. H. Mi\*, J.-H. Seo\*, C.-J. Ku\*, J. Shi, X. Wang, Y. Lu and **Z. Ma**, "Microwave TFTs made of MOCVD ZnO with ALD Al<sub>2</sub>O<sub>3</sub> gate dielectric," *IEEE Journal of the Electron Devices Society*, 4 (2), 55-9 (2016).
164. K. Zhang, G. Gui, P. Pathak, J.-H. Seo, J. P. Blanchard and **Z. Ma**, "Quantitative modeling of betavoltaic microbattery performance," *Sensors and Actuators: A Physical*, 240, 131-137 (2016).
165. L. Menon, H. Yang, S. J. Cho, S. Mikael, **Z. Ma** and W. Zhou, "Heterogeneously integrated InGaAs and Si membrane four color photodetector arrays," *IEEE Photonics Journal*, 8(2), 6801907 (2016).
166. J.-H. Seo, K. Zhang, M. Kim, D. Zhao, H. Yang, W. Zhou and **Z. Ma**, "Flexible phototransistors based on single-crystalline silicon nanomembranes," *Advanced Optical Materials*, 4(1), 120–125 (2016). (**Journal Cover**) (**The fastest flexible phototransistor, with the least materials used for making it. Significant press/media coverage.**)
167. J.-H. Seo, H. Wu, S. Mikael, H. Mi, G. Venkataramanan, J. P. Blanchard, S. Gong, W. Zhou, D. Morgan and **Z. Ma**, "Thermal diffusion boron doping of single-crystal natural diamond," *Journal of Applied Physics*, 119, 205703 (2016). (**News Coverage**)
168. J.-H. Seo, H. Wu, S. Mikael, H. Mi, J. P. Blanchard, G. Venkataramanan, W. Zhou, S. Gong, D. Morgan and **Z. Ma**, "Thermal diffusion boron doping of single-crystal diamond," *arXiv:1603.01307*. (2016).
169. Y. Wang, H. Mi, Q. Zheng, H. Zhang, **Z. Ma** and S. Gong, "Highly stretchable and sensitive piezoresistive carbon nanotube/elastic triisocyanate-crosslinked polytetrahydrofuran nanocomposites," *Journal of Materials Chemistry C*, 4, 460-467 (2016).
170. Y. Qiu, Y. H. Jung, S. Lee, J. Lee, T. Y. Shih, Y. Xu, R. Xu, W. Lin, J. C. Williams, N. Behdad and **Z. Ma**, "Flexible capacitively loaded antenna with parylene conformal coating," *Microwave Journal*, 59 (4), 134-142 (2016).
171. M. Cho, J.-H. Seo, M. Kim, J. Lee, D. Liu, W. Zhou, Z. Yu, and **Z. Ma** "Resonant cavity germanium photodetector via stacked single-crystalline nanomembranes", *Journal of Vacuum Science and Technology B* 34, 040604 (2016).
172. M. Cho\*, J.-H. Seo \*, D. Zhao, J. Lee, W. Zhou and **Z. Ma**, "Amorphous Si/SiO<sub>2</sub> distributed Bragg reflectors with transfer printed single-crystalline Si nanomembranes," *Journal of Vacuum Science and Technology B*, 34, 040601 (2016). **Editor's Pick.**
173. Y. H. Jung, Y. Qiu, S. Lee, T.-Y. Shih, Y. Xu, R. Xu, J. Lee, A. A. Schendel, W. Lin, J. C. Williams, N. Behdad and **Z. Ma**, "A compact parylene-coated WLAN flexible antenna for implantable electronics," *IEEE Antennas and Wireless Propagation Letters*, 15, 1382-1385, (2016).

174. M. Kim, W. Fan, J. Seo, N. Cho, S. Liu, D. Geng, Y. Liu, S. Gong, X. Wang, W. Zhou and **Z. Ma**, "Polycrystalline GeSn thin films on Si formed by alloy evaporation," *Applied Physics Express*, 8 (6), 061301 (2015).
175. H. Yang, D. Zhao, S. Liu, Y. Liu, J.-H. Seo, **Z. Ma** and W. Zhou, "Transfer printed nanomembranes for heterogeneously integrated membrane photonics," *Photonics*, 2, 1081-1100 (2015).
176. S. J. Cho, Y. H. Jung and **Z. Ma**, "X-Band compatible flexible microwave inductors and capacitors on plastic substrate," *IEEE Journal of the Electron Devices Society*, 3(5), 435-439 (2015).
177. L. Menon, H. Yang, S. J. Cho, S. Mikael, **Z. Ma** and W. Zhou, "Transferred flexible three-color silicon membrane photodetector arrays," *IEEE Photonics Journal*, 7(1), 1-6 (2015).
178. M. Wu, J. Zhao, F. Xu, T.-H. Chang, R. Jacobberger, **Z. Ma** and M. Arnold, "Highly stretchable carbon nanotube transistors enabled by buckled ion gel gate dielectrics," *Applied Physics Letters*, 107, 053301 (2015).
179. D.-W. Park, S. Mikael, T.-H. Chang, S. Gong and **Z. Ma**, "Bottom-gate coplanar graphene transistors with enhanced graphene adhesion on atomic layer deposition Al<sub>2</sub>O<sub>3</sub>," *Applied Physics Letters*, 10, 102106 (2015).
180. M. Cho, J.-H. Seo, J. Lee, D. Zhao, H. Mi, X. Yin, M. Kim, X. Wang, W. Zhou and **Z. Ma**. "Ultra-thin distributed Bragg reflectors via stacked single-crystal silicon nanomembranes," *Applied Physics Letters*, 106, 181107 (2015).
181. M. Kim, W. Fan, J.-H. Seo, N. Cho, S. C. Liu, D. Geng, S. Gong, W. Zhou, X. Wang and **Z. Ma**, "Polycrystalline GeSn thin film on Si formed by alloy evaporation," *Applied Physics Express*, 8, 061301 (2015).
182. M. Kim, H. Mi, M. Cho, J.-H. Seo, W. Zhou, S. Gong and **Z. Ma**, "Tunable biaxial in-plane compressive strain in a Si nanomembrane transferred on a polyimide film," *Applied Physics Letters*, 106, 212107 (2015).
183. Y. Wang, H. Mi, Q. Zheng, **Z. Ma** and S. Gong, "Graphene/phase change material nanocomposites: light-driven, reversible electrical resistivity regulation via form-stable phase transitions," *ACS Applied Materials & Interfaces*, 7 (4), 2641–2647 (2015).
184. Y. Wang, H. Mi, Q. Zheng, **Z. Ma** and S. Gong, "Flexible infrared responsive multi-walled carbon nanotube (MWCNT)/form-stable phase change material (PCM) nanocomposites," *ACS Applied Materials & Interfaces*, 7, 21602-21609 (2015).
185. H. Mi, S. Mikael, S. C. Liu, J.-H. Seo, G. Gui, A. L. Ma, P. F. Nealey and **Z. Ma**, "Creating periodic local strain in monolayer graphene with nanopillars patterned by self-assembled block copolymer," *Applied Physics Letters*, **107**, 143107 (2015).
186. J.-H. Seo, T.-H. Chang, J. Lee, R. Sabo, W. Zhou, Z. Cai, S. Gong and **Z. Ma**, "Microwave flexible transistors on cellulose nanofibrillated fiber substrates", *Applied Physics Letters*, 106, 262101 (2015). (Selected in the Collection of "Stretching the Limits of Flexible and Wearable Electronic" of Applied Physics Letters).



187. S. Liu, D. Zhao, J.-H. Seo, Y. Liu, **Z. Ma** and W. Zhou, "Athermal photonic crystal membrane reflectors on diamond", *IEEE Photonics Technology Letters*, 27(10), 1072-1075 (2015).
188. J.-H. Seo, J. Li, J. Lee, S. Gong, J. Lin, H. Jiang and **Z. Ma**, "A simplified method of making flexible blue LEDs on a plastic substrate", *IEEE Photonics Journal*, 7(2), 8200207 (2015).
189. S.-K. Kang, S.-W. Hwang, S. Yu, J.-H. Seo, E. A. Corbin, J. Shin, D. S. Wie, R. Bashir, **Z. Ma** and J. A. Rogers, "Biodegradable thin metal foils and spin-on glass materials for transient electronics", *Advanced Functional Materials*, 25, 1789-1797 (2015). **(Journal Cover)**
190. Y. H. Jung, T.-H. Chang, H. Zhang, C. Yao, Q. Zheng, V. W. Yang, H. Mi, M. Kim, S. J. Cho, D.-W. Park, H. Jiang, J. Lee, Y. Qiu, W. Zhou, Z. Cai, S. Gong and **Z. Ma**, "High-performance green flexible electronics based on biodegradable cellulose nanofibril paper," *Nature Communications* 6, 7170 (2015).
191. G. Gui, D. Morgan, J. Booske, J. Zhong and **Z. Ma**, "Local strain effect on the band gap engineering of graphene by a first-principles study," *Applied Physics Letters*, **106**, 053113 (2015).
192. Q. Zheng, Z. Cai, **Z. Ma** and S. Gong, "Cellulose nanofibril/reduced graphene oxide/carbon nanotube hybrid aerogels for highly flexible and all-solid-state supercapacitors," *ACS Applied Materials and Interfaces*, 7, 3263–3271 (2015). DOI: 10.1021/am507999s.
193. D.-W. Park, S. Mikael, T.-H. Chang and **Z. Ma**, "Graphene adhesion control on ALD Al<sub>2</sub>O<sub>3</sub> in bottom-gate graphene field-effect transistors," *Applied Physics Letters*, **106**, 102106 (2015).
194. W. Zhou, D. Zhao, Y.-C. Shuai, H. Yang, S. Chuwongin, A. Chadha, J.-H. Seo, K. X. Wang, V. Liu, **Z. Ma** and S. Fan, "Progress in 2D photonic crystal Fano resonance photonics," *Progress in Quantum Electronics*, **38**(1), 1-74 (2014).
195. D.-W. Park\*, A. A. Schendel\*, S. Mikael\*, S. K. Brodnick, T. J. Richner, J. P. Ness, M. R. Hayat, F. Atry, S. T. Frye, R. Pashaie, S. Thongpang, **Z. Ma** and J. C. Williams, "Graphene-based carbon-layered electrode array technology for neural imaging and optogenetic applications," *Nature Communications*, 5, 5258 (2014). DOI: 10.1038/ncomms6258.
196. Y. Liu, A. Chadha, D. Zhao, J. R. Piper, Y. Jia, Y. Shuai, L. Menon, H. Yang, **Z. Ma**, S. Fan, F. Xia and W. Zhou, "Approaching total absorption at near infrared in a large area monolayer graphene by critical coupling", *Applied Physics Letters*, **105**, 181105 (2014).
197. Y. J. Qiu, Y. H. Jung, S. Lee, T. Y. Shih, J. Lee, Y. Xu, R. Xu, W. Lin, N. Behdad and **Z. Ma**, "Compact parylene-c-coated flexible antenna for WLAN and upper-band UWB applications," *Electronics Letters*, **50** (24), 1782-1784 (2014).
198. D. Zhao, H. Yang, J.-H. Seo, Z. Ma, and W. Zhou, "Design and characterization of photonic crystal membrane reflector based vertical cavity surface emitting lasers on silicon", *Review of Nanoscience and Nanotechnology*, **3**, 77-87 (2014).
199. T.-I. Kim, M. J. Kim, Y. H. Jung, H. Jang, c. Dagdeviren, H. An Pao, S. J. Cho, A. Carlson, K. J. Yu, A. Ameen, H.-J. Chung, S. H. Jin, **Z. Ma** and J. A. Rogers, "Thin film receiver materials for deterministic assembly by transfer printing," *Chemistry of Materials*, **26**, 3502-3507 (2014). [dx.doi.org/10.1021/cm501002b](https://doi.org/10.1021/cm501002b) **(Journal Cover)**

200. J.-H. Seo, S. Mikael, H. Mi, G. Venkataramanan, J. P. Blanchard, W. Zhou, S. Gong and **Z. Ma**, "Thermal diffusion doping of single crystal diamond," *arXiv:1402.1883v3*, (2014).
201. G. Qin, G. Tu, T. Cai, J. Ma and **Z. Ma**, "Fabrication, characterisation and modelling of fast flexible semiconductor nanomembrane electronics," *International Journal of Nanotechnology*, **11**, 190-206 (2014).
202. F. Xu, M.-Y. Wu, N. Safron, S. S. Roy, D. J. Bindl, J.-H. Seo, T.-H. Chang, **Z. Ma** and M. S. Arnold, "Highly stretchable carbon nanotube transistors with ion gel gate dielectrics," *Nano Letters*, **14**(2), 682-686 (2014). [dx.doi.org/10.1021/nl403941a](https://doi.org/10.1021/nl403941a)
203. F. Wang, A. V. Kvit, J.-H. Seo, Z. Li, **Z. Ma** and X. Wang, "Cl-doped ZnO nanowires with metallic conductivity and their application for high-performance photoelectrochemical electrodes," *ACS Applied Materials and Interfaces*, **6**(2), 1288-1293 (2014). [10.1021\\_am405141s](https://doi.org/10.1021/am405141s).
204. G. Qin, T. Cai, H.-C. Yuan, J.-H. Seo, J. Ma and **Z. Ma**, "Flexible radio-frequency single-crystal germanium switch on plastic substrates," *Applied Physics Letters*, **104**, 163501 (2014).
205. H. Mi, S. Mikael, D. Butt, T. Allen, K. Sridharan, J. P. Blanchard and **Z. Ma**, "Monitoring the oxidation of nuclear fuel cladding using Raman spectroscopy," *Journal of Nuclear Materials*, **445**(1-3), 7-11 (2014).
206. J.-H. Seo, J. Park, **Z. Ma**, J. Choi and B.-K. Ju, "Nano-patterning by laser interference lithography: applications to optical devices", *Journal of Nanoscience and Nanotechnology*, **14**(2), 1521-1532 (2014).
207. J.-H. Seo, J. Park, **Z. Ma**, J. Choi and B.-K. Ju, "Nano-patterning by laser interference lithography: applications to optical devices", [arxiv.org/pdf/1402.2189](https://arxiv.org/pdf/1402.2189) (2014).
208. G. Qin, J. Ma, N. Jiang, **Z. Ma**, P. Ma and M. Racanelli, "Experimental characterization of proton radiated SiGe power HBTs at extreme temperatures," *Journal of Circuits, Systems and Computers*, **22**, 1340026 (2013). DOI: 10.1142/S0218126613400264.
209. A. S. Chadha, D. Zhao, S. Chuwongin, **Z. Ma**, and W. Zhou, "Polarization- and angle-dependent characteristics in two dimensional photonic crystal membrane reflectors," *Applied Physics Letters*, **103**(21), 211107 (2013).
210. Y. Shuai, D. Zhao, A. S. Chadha, J.-H. Seo, H. Yang, S. Fan, **Z. Ma** and W. Zhou, "Coupled double-layer Fano resonance photonic crystal filters with lattice-displacement," *Applied Physics Letters*, **103**(24), 241106 (2013).
211. Y. Shuai, D. Zhao, Z. Tian, J.-H. Seo, D. V. Plant, **Z. Ma**, S. Fan, and W. Zhou, "Double-layer Fano resonance photonic crystal filters," *Optics Express*, **21**(21), 24582-24589 (2013).
212. Y. Shuai, D. Zhao, G. Medhi, R. Peale, **Z. Ma**, W. Buchwald, R. Soref and W. Zhou, "Fano-resonance photonic crystal membrane reflectors at mid- and far-infrared," *IEEE Photonics Journal*, **5**(1), 4700206 (2013).

213. J. Hu, L. Li, H. Lin, P. Zhang, W. Zhou and **Z. Ma**, “Flexible integrated photonics: where materials, mechanics and optics meet,” *Optical Materials Express*, **3**(9), 1313-1331 (2013). **“The Most Cited OME Papers of the Decade” by the journal, as of 2020.**
214. J.-H. Seo, T.-Y. Oh, J. Park, W. Zhou, B.-K. Ju and **Z. Ma**, “A multifunction heterojunction formed between pentacene and single-crystal silicon nanomembrane,” *Advanced Functional Materials*, **23**(27), 3398-3403 (2013). **(Journal Cover)**
215. S.-W. Hwang, X. Huang, J.-H. Seo, J.-K. Song, S. Kim, S. Hage-Ali, H.-J. Chung, H. Tao, F. G. Omenetto, **Z. Ma**, and J. A. Rogers, “Materials for bioresorbable radio frequency electronics”, *Advanced Materials*, **25**(26), 3526-3531 (2013).
216. J.-H. Seo, Y. Zhang, H.-C. Yuan, Y. Wang, W. Zhou, J. Ma, **Z. Ma** and G. Qin, “Investigation of various mechanical bending strains on characteristics of flexible monocrystalline silicon nanomembrane diodes on a plastic substrate”, *Microelectronic Engineering*, **110**, 40-43 (2013).
217. H. Zhou, J.-H. Seo, D. M. Paskiewicz, Y. Zhu, G. K. Celler, P. M. Voyles, W. Zhou, M. G. Lagally and **Z. Ma**, “Fast flexible electronics with strained silicon nanomembranes,” *Scientific Reports*, **3**, 1291 (2013).
218. J.-H. Seo, J. Park, D. Zhao, H. Yang, W. Zhou,, B.-K. Ju and **Z. Ma**, “Large-area printed broadband membrane reflectors by laser interference lithography,” *IEEE Photonics Journal*, **5**(1) 2200106 (2013).
219. G. Qin, J.-H. Seo, Y. Zhang, H. Zhou, W. Zhou, Y. Wang, J. Ma and **Z. Ma**, “RF characterization of gigahertz flexible silicon thin-film transistor on plastic substrates under bending conditions,” *IEEE Electron Device Letters*, **34**(2), 262-264 (2013).
220. G. Qin, H.-C. Yuan, Y. Qin, J.-H. Seo, Y. Wang, J. Ma, and **Z. Ma**, "Fabrication and characterization of flexible microwave single-crystal germanium nanomembrane diodes on a plastic substrate", *IEEE Electron Device Letters*, **34**(2), 160-162 (2013).
221. G. Qin, G. Wang, N. Jiang, J. Ma, and **Z. Ma**, “On the configuration- and frequency-dependent linearity characteristics of SiGe HBTs under different impedance matching conditions,” *Microelectronics Reliability*, **53**(3) 409-413 (2013).
222. G. Qin, J.-H. Seo, Y. Zhang, H. Zhou, W. Zhou, Y. Wang, J. Ma, and **Z. Ma**, “RF characterization of gigahertz flexible silicon thin-film transistor on plastic substrates under bending conditions”, *IEEE Electron Device Letters*, **34**, 262-264 (2013).
223. T. A. Carstens, M. L. Corradini, J. P. Blanchard, C.-H. Liu, M. Li, N. Behdad and **Z. Ma**, “Thermoelectric powered wireless sensors for dry-cask storage,” *IEEE Transactions on Nuclear Science*, **60**(2), 1072-1079 (2013).
224. T. A. Carstens, M. L. Corradini, J. P. Blanchard, and **Z. Ma**, “Gamma radiation influence on thermoelectric powered wireless sensors for dry-cask storage,” *Electrical and Power Engineering Frontier*, **2**(2) 30-36 (2013).
225. W. Zhou and **Z. Ma**, “Breakthroughs in Photonics 2012: Breakthroughs in nanomembranes and nanomembrane lasers,” *IEEE Photonics Journal*, **5**(2), 0700707 (2013). **(Journal Cover)**

226. H. Yang, D. Zhao, S. Chuwongin, J.-H. Seo, W. Yang, Y. Shuai, J. Berggren, M. Hammar, **Z. Ma** and W. Zhou, "Transfer-printed stacked nanomembrane lasers on silicon," *Nature Photonics*, **6**(9), 615-620 (2012). (*Once listed as the No. 3 top downloaded paper of the journal. Over 100 instances of national and international online press coverage*).
227. G. Gui, J. Zhong and **Z. Ma**, "Electronic properties of rippled graphene." *The Journal of Physics*, **402** (1), 012004 (2012).
228. W. Zhou, **Z. Ma**, S. Chuwongin, Y.-C. Shuai, J.-H. Seo, D. Zhao, H. Yang and W. Yang, "Semiconductor nanomembranes for integrated silicon photonics and flexible photonics (**Invited**)", *Optical and Quantum Electronics*, Special Issue on *Photonic Integration*, **44**, 12-13, 605-611 (2012).
229. D. Zhao, H. Yang, S. Chuwongin, J.-H. Seo, **Z. Ma** and W. Zhou, "Design of photonic crystal membrane reflector based VCSELs", *IEEE Photonics Journal*, **4**(6), 2169-2175 (2012).
230. F. Wang, J.-H. Seo, **Z. Ma** and X. D. Wang, "Substrate-free self-assembly approach toward large-area nanomembranes," *ACS Nano*, **6**(3), 2602-2609 (2012).
231. G. Qin, Y. Yan, N. Jiang, J. Ma, P. Ma, M. Racanelli and **Z. Ma**, "RF characteristics of proton radiated large-area SiGe HBTs at extreme temperatures," *Microelectronics Reliability*, **52**(11), 2568-2571 (2012).
232. K. Zhang, J.-H. Seo, W. Zhou and **Z. Ma**, "Single-crystal nanomembrane-based fast flexible electronics," (**Invited Review**), *Journal of Physics D: Applied Physics*, **45**, 143001 (2012).
233. T. Saha, M. Lu, **Z. Ma** and W. Zhou, "Design of an angle detector for laser beams based on grating coupling," *Micromachines*, **3**(1), 36-44 (2012). Special issue on "Nano-Photonic Devices"
234. T. A. Carstens, M. L. Corradini, J. P. Blanchard and **Z. Ma**, "Thermoelectric powered wireless sensors for spent fuel monitoring," *IEEE Transactions on Nuclear Science*, **59**(4) 1408-1413 (2012).
235. A. B. Yankovich, B. Puchala, F. Wang, J.-H. Seo, D. Morgan, X. D. Wang, **Z. Ma**, A. V. Kvit, and P. M. Voyles, "Stable p-type conduction from Sb-decorated head-to-head basal plane inversion domain boundaries in ZnO nanowires," *Nano Letters*, **12**(3), 1311-1316 (2012).
236. H. Yang, D. Zhao, J.-H. Seo, S. Chuwongin, S. Kim, J. A. Rogers, **Z. Ma** and W. Zhou, "Broadband membrane reflectors on glass," *IEEE Photonics Technology Letters*, **24**(6), 476-478 (2012).
237. G. Qin, H.-C. Yuan, G. K. Celler, J. Ma and **Z. Ma**, "RF model of flexible microwave switches employing single-crystal silicon nanomembranes on a plastic substrate," *Microelectronic Engineering* **95**, 21-25 (2012).
238. G. Qin, L. Yang, J.-H. Seo, H.-C. Yuan, G. K. Celler J. Ma and **Z. Ma**, "Experimental characterization and modeling of the bending strain effect on flexible microwave diodes and switches on plastic substrate," *Applied Physics Letters*, **99**(24), 243104 (2011).

239. J. Shi, M. B. Starr, X. Hua, Y. Hara, M. A. Anderson, J.-H. Seo, **Z. Ma** and X. D. Wang, "Interface engineering by piezoelectric field in ZnO-based photoelectrochemical anode," *Nano Letters*, **11**, 5587-5593 (2011).
240. G. Qin, H.-C. Yuan, G. K. Celler, J. Ma and **Z. Ma**, "Influence of bending strains on radio frequency characteristics of flexible microwave switches using single-crystal silicon nanomembranes on plastic substrate," *Applied Physics Letters*, **99**(15), 153106 (2011).
241. D. Zhao, H. Yang, **Z. Ma** and W. Zhou, "Polarization independent broadband reflectors based on cross-stacked gratings," *Optics Express*, **19**(10), 9050-9055 (2011).
242. **Z. Ma**, "An electronic second skin," *Science*, **333**(6044), 830-831 (2011).
243. W. Yang, R. Li, **Z. Ma** and W. Zhou, "Electrical properties of stacking electrodes for flexible crystalline semiconductor photonic devices," *Semiconductor Science and Technology*, **26**(9), 095018 (2011). (**IOP Select Paper.**)
244. F. Wang, J.-H. Seo, D. Bayerl, J. Shi, H. Mi, **Z. Ma**, D. Zhao, Y. Shuai, W. Zhou and X. Wang, "An aqueous solution-based doping strategy for large-scale synthesis of Sb-doped ZnO nanowires," *Nanotechnology*, **22**(22), 225602 (2011).
245. G. Qin, H.-C. Yuan, G. K. Celler, W. Zhou, J. Ma and **Z. Ma**, "RF model of flexible microwave single-crystalline silicon nanomembrane PIN diodes on a plastic substrate," *Microelectronics Journal*, **42**(3) 509-514 (2011).
246. J.-H. Seo, H.-C. Yuan, L. Sun, W. Zhou and **Z. Ma**, "Transferrable single-crystal silicon nanomembranes and their application to flexible microwave systems," **Invited Paper**, *Journal of Information Display*, **12**(2), 109-113 (2011).
247. G. Qin, H.-C. Yuan, G. K. Celler, J. Ma and **Z. Ma**, "Impact of strain on radio frequency characteristics of flexible microwave single-crystalline silicon nanomembrane p-intrinsic-n diodes on plastic substrates," *Applied Physics Letters*, **97**(23), 233110 (2010).
248. G. Qin, H.-C. Yuan, H. Yang, W. Zhou and **Z. Ma**, "Flexible thin-film transistors fabricated in polycrystalline silicon membrane transferred to a plastic substrate," *Semiconductor Science and Technology*, **26**, 025005 (2010). (**Journal Cover**)
249. N. Jiang, N. Cho, and **Z. Ma**, "Effects of proton irradiation on SiGe HBTs implemented with isolation guard rings," *Semiconductor Science and Technology*, **25**(12), 125007 (2010).
250. G. Qin, N. Jiang, J.-H. Seo, N. Cho, G. E. Ponchak, D. van der Weide, P. Ma, S. Stetson, M. Racanelli and **Z. Ma**, "Cryogenic operation of a 24 GHz MMIC SiGe HBT medium power amplifier," *Semiconductor Science and Technology*, **25**(12), 125002 (2010). (**Listed in Highlights of 2010 of the journal, Editor's Choice.**)
251. L. Sun, G. Qin, J.-H. Seo, G. K. Celler, W. Zhou and **Z. Ma**, "12-GHz Thin-film Transistors on Transferrable Silicon Nanomembranes for High-Performance Flexible Electronics," *Small*, **6**(22), 2553-2557 (2010). DOI: 10.1002/smll.201000522. (**Journal Cover**)
252. G. Qin, G. Wang, L. McCaughan and **Z. Ma**, "Superiority of common-base to common-emitter heterojunction bipolar transistors," *Applied Physics Letters*, **97**(13), 133506 (2010).

253. D. Zhao, **Z. Ma** and W. Zhou, "Field penetrations in photonic crystal Fano reflectors", *Opt. Express*, **18**(13), 14152-14158 (2010).
254. Z. Qiang, H. Yang, S. Chuwongin, D. Zhao, **Z. Ma**, and W. Zhou, "Design of Fano broadband reflectors on SOI", *IEEE Photonics Technology Letters*, **22**(15), 1108-1110 (2010).
255. W. Yang, H. Yang, G. Qin, **Z. Ma**, J. Berggren, M. Hammar, R. Soref and W. Zhou, "Large-area InP-based crystalline nanomembrane flexible photodetectors," *Applied Physics Letters*, **96**(12), 121107 (2010).
256. L. Chen, H. Yang, Z. Qiang, H. Pang, L. Sun, **Z. Ma**, R. Pate, A. Stiff-Roberts, S. Gao, J. Xu, G. J. Brown and W. Zhou, "Colloidal quantum dot absorption enhancement in flexible Fano filters," *Applied Physics Letters*, **96**(8), 083111 (2010).
257. L. Sun, G. Qin, H. Huang, H. Zhou, N. Behdad, W. Zhou and **Z. Ma**, "Flexible high-frequency microwave inductors and capacitors integrated on a polyethylene terephthalate substrate," *Applied Physics Letters*, **96**(1), 013509 (2010).
258. G. Qin, H.-C. Yuan, G. K. Celler, W. Zhou and **Z. Ma**, "Flexible microwave PIN diodes and switches employing transferrable single-crystal Si nanomembranes on plastic substrates," *Journal of Physics D: Applied Physics*, **42**(23), 234006 (2009).
259. W. Zhou, **Z. Ma**, H. Yang, Z. Qiang, G. Qin, H. Pang, L. Chen, W. Yang, S. Chuwongin and D. Zhao, "Flexible photonic-crystal Fano filters based on transferred semiconductor nanomembranes," *Journal of Physics D: Applied Physics*, **42**(23), 234007 (2009).
260. D. Y. C. Lie, J. Lopez, J. D. Popp, J. F. Rowland, G. Wang, G. Qin, and **Z. Ma**, "Highly efficient monolithic class E SiGe power amplifier design at 900 and 2400 MHz," *IEEE Transactions on Circuits and Systems*, **56-I**(7), 1455-1466 (2009).
261. H.-C. Yuan, G. Qin, G. K. Celler and **Z. Ma**, "Bendable high-frequency microwave switches formed with single-crystal silicon nanomembranes on plastic substrates," *Applied Physics Letters*, **95**(4), 043109 (2009).
262. H. Yang, S. Chuwongin, Z. Qiang, L. Chen, H. Pang, **Z. Ma** and W. Zhou, "Resonance control of membrane reflectors with effective index engineering," *Applied Physics Letters*, **95**(2), 023110 (2009).
263. Z. Mi, J. Yang, P. Bhattacharya, G. Qin and **Z. Ma**, "High performance quantum dot lasers and integrated optoelectronics on Si," *Proceedings of the IEEE*, **97**(7), 1239-1249 (2009).
264. L. Chen, Z. Qiang, H. Yang, H. Pang, **Z. Ma** and W. Zhou, "Polarization and angular dependent transmissions on transferred nanomembrane Fano filters," *Optical Express*, **17**(10), 8396-8406 (2009).
265. G. Qin, H. Zhou, E. B. Ramayya, **Z. Ma** and I. Knezevic, "Electron mobility in scaled silicon MOSFETs on off-axis substrates," *Applied Physics Letters*, **94**(7), 073504 (2009).
266. H.-C. Yuan, J. Shin, G. Qin, L. Sun, P. Bhattacharya, M. G. Lagally, G. K. Celler and **Z. Ma**, "Flexible photodetectors on plastic substrates by use of printing transferred single-crystal germanium membranes," *Applied Physics Letters*, **94**(1), 013102 (2009). (**Journal Cover**)

267. Z. Qiang, H. Yang, L. Chen, H. Pang, **Z. Ma**, and W. Zhou, "Fano filters based on transferred silicon nanomembranes on plastic substrates," *Applied Physics Letters*, **93**(6), 061106 (2008). Also included in *Virtual Journal of Nanoscale Science & Technology*, **18**(8), (2008).
268. H. Yang, H. Pang, Z. Qiang, **Z. Ma** and W. Zhou, "Surface-normal Fano filters based on transferred silicon nanomembranes on glass substrates," *Electronics Letters*, **44**(14), 858-860 (2008). **Selected for *Electronics Letters Special Supplement: Silicon Photonics*, June 2009.**
269. J. Yang, P. Bhattacharya, Z. Mi, G. Qin and **Z. Ma**, "Quantum dot lasers and integrated optoelectronics on silicon platform," (**Invited Paper**), *Chinese Optics Letters*, **6**(10), 727-731 (2008).
270. H.-C. Yuan, M. M. Roberts, D. E. Savage, M. G. Lagally, G. K. Celler and **Z. Ma**, "Thermally processed high-mobility MOS thin-film transistors on transferable single-crystal elastically strain-sharing Si/SiGe/Si nanomembranes," *IEEE Transactions on Electron Devices*, **55**(3), 810-815 (2008).
271. Z. Qiang, W. Zhou, R. A. Soref and **Z. Ma**, "Characteristics of ultra-compact polymer modulators based on silicon photonic crystal ring resonators," *Journal of Nanophotonics*, **2**(1), 023507 (2008).
272. O. Auciello, S. Pacheco, A. A. Sumant, C. Gudeman, S. Sampath, A. Datta, R. W. Carpick, V. Adiga, **Z. Ma**, H.-C. Yuan, J. A. Carlisle, B. Kabius, J. Hiller, S. Srinivasan, "Science and technology of integrated ultrananocrystalline diamond/multifunctional materials for fabrication of high performance MEMS/NEMS devices," *IEEE Microwave Magazine*, **8**(6), 61-75 (2007).
273. H.-C. Yuan, G. K. Celler and **Z. Ma**, "7.8-GHz flexible thin-film transistors on a low-temperature plastic substrate," *Journal of Applied Physics*, **102**(3), 034501 (2007).
274. H.-C. Yuan, G. K. Celler and **Z. Ma**, "Observation of threshold-voltage instability in single-crystal silicon TFTs on flexible plastic substrate," *IEEE Electron Device Letters*, **28**(7), 590-592 (2007).
275. J. Shin, P. Bhattacharya, H.-C. Yuan, **Z. Ma** and G. Váró, "Low-power bacteriorhodopsin-silicon n-channel metal-oxide field-effect transistor photoreceiver," *Optics Letters*, **32**(5), 500-502 (2007).
276. N. Jiang, **Z. Ma**, P. Ma and M. Racanelli, "Proton radiation tolerance of SiGe power HBTs," *Semiconductor Science and Technology*, **22**(1) S46-S49 (2007).
277. H. Li, **Z. Ma**, P. Ma and M. Racanelli, "Thermal resistance of SiGe HBTs at high power densities" *Semiconductor Science and Technology*, **22**(1), S68-S71 (2007).
278. H.-C. Yuan, G. Wang, **Z. Ma**, M. M. Roberts, D. E. Savage and M. G. Lagally, "Flexible thin-film transistors on biaxial- and uniaxial-strained Si and SiGe membranes," *Semiconductor Science and Technology*, **22**, S72-S75 (2007).
279. G. Wang, H.-C. Yuan and **Z. Ma**, "On the scaling of emitter stripes of SiGe power HBTs," *Semiconductor Science and Technology*, **22**(1), S84-S88 (2007).

280. N. Jiang and **Z. Ma**, “Current gain of SiGe HBTs under high base doping concentrations” *Semiconductor Science and Technology*, **22**(1), S168-S172 (2007).
281. G. Qin, N. Jiang, G. Wang and **Z. Ma**, “SiGe HBT linearity comparison between CE and CB configurations,” *Semiconductor Science and Technology*, **22**(1), S216-S220 (2007).
282. P. K. L. Chan, K. P. Pipe, G. Qin and **Z. Ma**, “CCD-based thermoreflectance imaging of current dynamics in high power SiGe HBTs,” *Applied Physics Letters*, **89**, 233521 (2006).
283. H.-C. Yuan and **Z. Ma**, “Microwave thin-film transistors using Si nanomembranes on flexible polymer substrate,” *Applied Physics Letters*, **89**, 212105 (2006).
284. N. Jiang, **Z. Ma**, P. Ma and M. Racanelli, “Impact of proton radiation on the large-signal power performance of SiGe power HBTs,” *IEEE Transactions on Nuclear Science*, **53**(4), 2361-2366 (2006).
285. G. Wang, H.-C. Yuan and **Z. Ma**, “Ultrahigh-performance 8-GHz SiGe power HBT,” *IEEE Electron Device Letters*, **27**(5), 371-373 (2006).
286. H.-C. Yuan, **Z. Ma**, M. M. Roberts, D. E. Savage and M. G. Lagally, “High-speed strained-single-crystal-silicon thin-film transistors on flexible polymers,” *Journal of Applied Physics*, **100**(1), 013708 (2006).
287. **Z. Ma** and N. Jiang, “Base region optimization of SiGe HBTs for high-frequency microwave power amplification,” *IEEE Transactions on Electron Devices*, **53**(4), 875-883, (2006).
288. H.-C. Yuan, N. Jiang, **Z. Ma** and E. T. Croke, “High-gain multi-finger power n-MODFET on Si substrate,” *Electronics Letters*, **42**(6), 375-377 (2006).
289. **Z. Ma**, G. Wang, N. Jiang, G. E. Ponchak and S. A. Alterovitz, “Development of high power SiGe X-band (8-10 GHz) heterojunction bipolar transistors,” (**invited**), *Chinese Journal of Semiconductors*, **27**(2), 70-75 (2006).
290. **Z. Ma**, N. Jiang, G. Wang and S. A. Alterovitz, “An 18 GHz, 300 mW SiGe power HBT,” *IEEE Electron Device Letters*, **26**(6), 381-383 (2005).
291. **Z. Ma** and N. Jiang, “On the operation configuration of SiGe HBTs based on power gain analysis,” *IEEE Transactions on Electron Devices*, **52**(2), 248-255 (2005).
292. N. Jiang, **Z. Ma**, G. Wang, P. Ma and M. Racanelli, “3-W SiGe power HBTs for wireless applications,” *Elsevier Science: Materials Science in Semiconductor Processing*, **8**(1-3), 323-326 (2005).
293. **Z. Ma**, S. Mohammadi, P. Bhattacharya, L. P. B. Katehi, S. A. Alterovitz and G. E. Ponchak, “A high power and high gain X-band Si/SiGe/Si heterojunction bipolar transistor,” *IEEE Trans. on Microwave Theory and Techniques*, **50**(4), 1101-1108 (2002).
294. **Z. Ma**, P. Bhattacharya, J.-S. Rieh, G. E. Ponchak, S. A. Alterovitz and E. T. Croke, “Reliability of microwave SiGe/Si heterojunction bipolar transistors,” *IEEE Microwave and Wireless Components Letters*, **11**(10), 401-403 (2001).



295. **Z. Ma**, S. Mohammadi, P. Bhattacharya, L. P. B. Katehi, S. A. Alterovitz, G. E. Ponchak, K. M. Strohm and J.-F. Luy, "Ku-band (12.6 GHz) SiGe/Si high-power heterojunction bipolar transistors," *Electronics Letters*, **37**(18), 1140-1142 (2001).
296. **Z. Ma**, S. Mohammadi, L.-H. Lu, P. Bhattacharya, L. P. B. Katehi, S. A. Alterovitz and G. E. Ponchak, "An X-band high-power amplifier using SiGe/Si HBT and lumped passive components," *IEEE Microwave and Wireless Components Letters*, **11**(7), 287-289 (2001).
297. **Z. Ma**, S. Mohammadi, P. Bhattacharya, L. P. B. Katehi, S. A. Alterovitz and G. E. Ponchak, "High power X-band (8.4GHz) SiGe/Si heterojunction bipolar transistor," *Electronics Letters*, **37**(12), 790-791 (2001).
298. O. Qasaimeh, **Z. Ma**, P. Bhattacharya and E. T. Croke, "Monolithically integrated multichannel SiGe/Si p-i-n-HBT photoreceiver arrays," *Journal of Lightwave Technology*, **18**(11), 1548-1553 (2000).
299. G. S. Was, H. Ji and **Z. Ma**, "Texture control in thin films using ion bombardment," *Texture and Microstructures*, **34**, 105-118 (2000).
300. **Z. Ma** and G. S. Was, "Aluminum metallization for flat-panel displays using ion-beam-assisted physical vapor deposition," *Journal of Materials Research*, **14**(10), 4051-4061 (1999).

#### BOOK AND BOOK CHAPTERS

1. **Z. Ma** and D. Liu (Ed.), "INORGANIC FLEXIBLE OPTOELECTRONICS: MATERIALS AND APPLICATIONS," Wiley-VCH, July 2019. ISBN: 978-3-527-34395-9.
2. J. Lee, I.-K. Lee and **Z. Ma**, "Chapter 5: Flexible and Stretchable High-Frequency RF Electronics," HANDBOOK OF FLEXIBLE AND STRETCHABLE ELECTRONICS, Ed. Muhammad Mustafa Hussain, CRC Press [Taylor and Francis Group LLC (2018)
3. T.-H. Chang, Y. H. Jung, D. Liu, H. Mi, J. Lee, J. Gong and **Z. Ma**, "Chapter 2: The Applications of Polyethylene Terephthalate for RF Flexible Electronics," POLYETHYLENE TEREPHTHALATE: USES, PROPERTIES AND DEGRADATION, Nova Science Publishers (2016), accepted. Editor: Naomi A. Barber.
4. H. Mi, **Z. Ma** and J. P. Blanchard: "Chapter 6: Raman Spectroscopy for Monitoring Strain on Graphene and Oxidation Corrosion on Nuclear Claddings", "RAMAN SPECTROSCOPY AND APPLICATIONS", Ed. Khan Maaz, Intech, (2017). ISBN 978-953-51-2908-0, Print ISBN 978-953-51-2907-3 <http://www.intechopen.com/books/raman-spectroscopy-and-applications/raman-spectroscopy-for-monitoring-strain-on-graphene-and-oxidation-corrosion-on-nuclear-claddings>  
Downloaded 501 times as of 09/09/2018.
5. Y. H. Jung, H. Zhang, **Z. Ma**, " Chapter 5: Wireless Applications of Stretchable Bioelectronics", STRETCHABLE BIOELECTRONICS FOR MEDICAL DEVICES AND SYSTEM, Ed. J. A. Rogers, R. Ghaffari, D.-H. Kim, Springer (2016).
6. Y. H. Jung, J.-H. Seo, W. Zhou, **Z. Ma**, "Chapter 5: High Speed, Flexible Electronics by Use of Si Nanomembranes", SILICON NANOMEMBRANES: FUNDAMENTAL SCIENCE AND APPLICATION, Ed. J. A. Rogers and J.-H. Ahn, Wiley-VCH (2016) doi: 10.1002/9783527691005.ch5.

7. W. Zhou, **Z. Ma**, H. Yang, D. Zhao, Y. Shuai, J.-H. Seo,: “Chapter 11: Semiconductor Nanomembranes for Fano Resonance Photonic Crystal Devices”, SILICON NANOMEMBRANES: FUNDAMENTAL SCIENCE AND APPLICATIONS, Ed. J. A. Rogers and J.-H. Ahn, Wiley-VCH (2016) doi: 10.1002/9783527691005.ch11.
8. R. Sabo, J.-H. Seo, **Z. Ma**, “Chapter X: Cellulose Nanofibril Composite Substrates for Flexible Electronics”, PRODUCTION AND APPLICATIONS OF CELLULOSE NANOMATERIALS, Ed. Michael T. Postek, Robert J. Moon, Alan W. Rudie, and Michael A. Bilodeau, TAPPI Press (2015).
9. **Z. Ma** and G. Qin, “Chapter 3: Fast Flexible Electronics Made from Nanomembranes Derived From High-Quality Wafer”, SEMICONDUCTOR NANOMATERIALS FOR FLEXIBLE TECHNOLOGIES: FROM PHOTOVOLTAICS AND ELECTRONICS TO SENSORS AND ENERGY STORAGE/HARVESTING DEVICES, Ed. Y. Sun and J. A. Rogers, Elsevier (2010).