

Publication List

- [1] Block, M., Bao, Y., Choi, S., Altman, E., **Yao, N. Y.**, *The Measurement-induced Transition in Long-range Interacting Quantum Circuits*. Phys. Rev. Lett., **128** 010604 (2022). 
- See also the [viewpoint](#) by S. Xu, [Physics](#), **15** 2 (2022). 
- [2] Zu, C., Machado, F., Ye, B., Choi, S., Kobrin, B., Mittiga, T., Hsieh, S., Bhattacharyya, P., Markham, M., Twitchen, D., Jarmola, A., Budker, D., Laumann, C. R., Moore, J. E., **Yao, N. Y.**, *Emergent hydrodynamics in a strongly interacting dipolar spin ensemble*. Nature, **597** 45-50 (2021).
Secondary reports about this work: [Physics World](#), [LBNL News Center](#),
- [3] Kyprianidis, A., Machado, F., Morong, W., Becker, P., Collins, K. S., Else, D. V., Feng, L., Hess, P. W., Nayak, C., Pagano, G., **Yao, N. Y.**, Monroe, C., *Observation of a prethermal discrete time crystal*. Science, **372** 1192-1196 (2021).
Secondary reports about this work: [Phys.org](#)
- [4] Schuster, T., Flicker, F., Li, M., Kotochigova, S., Moore, J. E., Ye, J., **Yao, N. Y.**, *Realizing Hopf Insulators in Dipolar Spin Systems*. Phys. Rev. Lett., **127** 015301 (2021).
- [5] Schuster, T., Flicker, F., Li, M., Kotochigova, S., Moore, J. E., Ye, J., **Yao, N. Y.**, *Floquet engineering ultracold polar molecules to simulate topological insulators*. Phys. Rev. A, **103** 063322 (2021).
- [6] Block, M., Kobrin, B., Jarmola, A., Hsieh, S., Zu, C., Figueroa, N. L., Acosta, V. M., Minguzzi, J., Maze, J. R., Budker, D., **Yao, N. Y.**, *Optically Enhanced Electric Field Sensing using Nitrogen-Vacancy Ensembles*. Phys. Rev. Applied **16**, 024024 (2021). 
- [7] Randall, J., Bradley, C. E., van der Gronden, F. V., Galicia, A., Abobeih, M. H., Markham, M., Twitchen, D. J., Machado, F., **Yao, N. Y.**, Taminiau, T. H., *Observation of a many-body-localized discrete time crystal with a programmable spin-based quantum simulator*. arXiv:2107.00736 (2021).
- [8] Kahanamoku-Meyer, G. D., Choi, S., Vazirani, U. V., **Yao, N. Y.**, *Classically-Verifiable Quantum Advantage from a Computational Bell Test*. arXiv:2104.00687 (2021).
- [9] Ye, B., Machado, F., **Yao, N. Y.**, *Floquet Phases of Matter via Classical Prethermalization*. Phys. Rev. Lett., **127** 140603 (2021). 
- See also the [viewpoint](#) by G. Engelhardt, [Physics](#), **14** 132 (2021). 
- [10] Davis, E. J., Ye, B., Machado, F., Meynell, S. A., Mittiga, T., Schenken, W., Joos, M., Kobrin, B., Lyu, Y., Bluvstein, D., Choi, S., Zu, C., Jayich, A. C. B., **Yao, N. Y.**, *Probing many-body noise in a strongly interacting two-dimensional dipolar spin system*. arXiv:2103.12742 (2021).
- [11] Kobrin, B., Yang, Z., Kahanamoku-Meyer, G. D., Olund, C. T., Moore, J. E., Stanford, D., **Yao, N. Y.**, *Many-Body Chaos in the SYK Model*. Phys. Rev. Lett., **126** 030602 (2021). 
- Secondary reports about this work:** [Phys.org](#)
- [12] Zaletel, M. P., Stamper-Kurn, D. M., **Yao, N. Y.** *Preparation of Low Entropy Correlated Many-body States via Conformal Cooling Quenches*. Phys. Rev. Lett., **126** 103401 (2021).
- [13] Sahay, R., Machado, F., Ye, B., Laumann, C. R., **Yao, N. Y.** *Emergent ergodicity at the transition between many-body localized phases*. Phys. Rev. Lett., **126** 100604 (2021).

- [14] Blok, M. S., Ramasesh, V. V., Schuster, T., O'Brien, K., Kreikebaum, J. M., Dahlen, D., Morvan, A., Yoshida, B., **Yao, N. Y.**, Siddiqi, I., *Quantum Information Scrambling in a Superconducting Qutrit Processor*. Phys. Rev. X **11**, 021010 (2021)
Secondary reports about this work: [LBNL News Center](#)
- [15] Monroe, C., Campbell, W. C., Duan, L.-M., Gong, Z.-X., Gorshkov, A. V., Hess, P., Islam, R., Kim, K., Pagano, G., Richerme, P., Senko, C., **Yao, N. Y.**, *Programmable Quantum Simulations of Spin Systems with Trapped Ions*. Rev. Mod. Phys., **93** 025001 (2021)
- [16] Wei, D., Rubio-Abadal, A., Ye, B., Machado, F., Kemp, J., Srakaew, K., Hollerith, S., Rui, J., Gopalakrishnan, S., **Yao, N. Y.**, Bloch, I., Zeiher, J., *Quantum gas microscopy of Kardar-Parisi-Zhang superdiffusion*. arXiv:2107.00038 (2021)
- [17] Schuster, T., Kobrin, B., Gao, P., Cong, I., Khabiboulline, E. T., Linke, N. M., Lukin, M. D., Monroe, C., Yoshida, B., **Yao, N. Y.**, *Many-body quantum teleportation via operator spreading in the traversable wormhole protocol*. arXiv:2102.00010 (2021)
- [18] Dolgirev, P. E., Chatterjee, S., Esterlis, I., Zibrov, A. A., Lukin, M. D., **Yao, N. Y.**, Demler, E., *Characterizing two-dimensional superconductivity via nanoscale noise magnetometry with single-spin qubits*. arXiv:2106.05283 (2021)
- [19] Chatterjee, S., Dolgirev, P. E., Esterlis, I., Zibrov, A. A., Lukin, M. D., **Yao, N. Y.**, Demler, E., *Single-spin qubit magnetic spectroscopy of two dimensional superconductivity*. arXiv:2106.03859 (2021)
- [20] Van Beeumen, R., Ibrahim, K. Z., Kahanamoku-Meyer, G. D., **Yao, N. Y.**, Yang, C., *Enhancing Scalability of a Matrix-Free Eigensolver for Studying Many-Body Localization*. arXiv:2012.00217 (2020)
- [21] Block, M., Motruk, J., Gazit, S., Zaletel, M. P., Landau, Z., Vazirani, U., **Yao, N. Y.**, *Performance of the rigorous renormalization group for first order phase transitions and topological phases*. Phys. Rev. B **103**, 195122 (2021)
- [22] Ye, B., Machado, F., White, C. D., Mong, R. S. K., **Yao, N. Y.**, *Emergent hydrodynamics in nonequilibrium quantum systems*. Phys. Rev. Lett., **125** 030601 (2020).
- [23] Else, D. V., Monroe, C., Nayak, C., **Yao, N. Y.**, *Discrete Time Crystals*. Ann. Rev. Cond. Mat. Phys. **11**, 467-499 (2020)
- [24] Machado, F., Else, D. V., Kahanamoku-Meyer, G. D., Nayak, C., **Yao, N. Y.** *Long-Range Prethermal Phases of Nonequilibrium Matter*. Phys. Rev. X **10**, 011043 (2020)
- [25] **Yao, N. Y.**, Nayak, C., Balents, L., Zaletel, M. P. *Classical Discrete Time Crystals*. Nature Physics **16**, 438-447 (2020)
- [26] Barter, T. H., Leung, T.-H., Okano, M., Block, M., **Yao, N. Y.**, Stamper-Kurn, D. M., *Spatial Coherence of a Strongly Interacting Bose Gas in the Trimerized Kagome Lattice*. Phys. Rev. A **101**, 011601 (2020)
- [27] Kemp, J., **Yao, N. Y.**, Laumann, C. R., *Symmetry enhanced boundary qubits at infinite temperature*. Phys. Rev. Lett., **125** 200506 (2020).
- [28] Olund, C. T., Block, M., Gazit, S., McGreevy, J., **Yao, N. Y.**, *Adiabatic ground state preparation in an expanding lattice*. Phys. Rev. B **101**, 155152 (2020)
- [29] Beeumen, R. V., Meyer, G. D., **Yao, N. Y.**, Yang, C., *A Scalable Matrix-Free Iterative Eigensolver for Studying Many-Body Localization*. Proceedings of the International Conference on High Performance Computing in Asia-Pacific Region, 179-187 (2020)
- [30] Else, D. V., Machado, F., Nayak, C., **Yao, N. Y.**, *An improved Lieb-Robinson bound for many-body Hamiltonians with power-law interactions*. Phys. Rev. A **101**, 022333 (2020)

- [31] Pagel, Z., Zhong, W., Parker, R. H., Olund, C. T., **Yao, N. Y.**, Mueller, H., *Symmetric Bloch oscillations of matter waves*. Phys. Rev. A **102**, 053312 (2020). 
- [32] Schuster, T., Gazit, S., Moore, J. E., **Yao, N. Y.**, *Floquet Hopf Insulators*. Phys. Rev. Lett., **123** 266803 (2019).
Secondary reports about this work: [Nature Reviews Physics](#) **1**, 700 (2019).
- [33] Hsieh, H. Bhattacharyya, P., Zu, C., Mittiga, T., Smart, T. J., Machado, F., Kobrin, B., Hohn, T. O., Rui, N. Z., Kamrani, M., Chatterjee, S., Choi, S., Zaletel, M. P., Struzhkin, V. V., Moore, J. E., Levitas, V. I., Jeanloz, R., **Yao, N. Y.** *Imaging stress and magnetism at high pressures using a nanoscale quantum sensor*. Science **366**, 1349-1354 (2019).
Secondary reports about this work: [Science Perspectives](#), [Phys.org](#), [Physics World](#)
- [34] Yoshida, B., **Yao, N. Y.** *Disentangling Scrambling and Decoherence via Quantum Teleportation*. Physical Review X, **9** 011006 (2019).
- [35] Landsman, K. A., Figgatt, C., Schuster, T., Linke, N. M., Yoshida, B., **Yao, N. Y.**, Monroe, C., *Verified Quantum Information Scrambling*. Nature **567**, 61-65 (2019).
Secondary reports about this work: [Nature News and Views](#), [Physics Worlds](#), [Cosmos](#)
- [36] Machado, F., Meyer, M. D., Else, D. V., Nayak, C., **Yao, N. Y.** *Exponentially Slow Heating in Short and Long-range Interacting Floquet Systems*. Phys. Rev. Research **1**, 033202 (2019)
- [37] Akkaravarawong, K., Vayrynen, J. I., Sau, J. D., Demler, E. A., Glazman, L. I., **Yao, N. Y.**, *Probing and dressing magnetic impurities in a superconductor*. Phys. Rev. Research **1**, 033091 (2019)
- [38] Zhu, B., Marino, J., **Yao, N. Y.**, Lukin, M. D., Demler, E. A., *Dicke time crystals in driven-dissipative quantum many-body systems*. New Journal of Physics, **21** 073028 (2019).
- [39] Mittiga, T., Hsieh, S., Zu, C., Kobrin, B., Machado, F., Bhattacharyya, P., Rui, N., Jarmola, A., Choi, S., Budker, D., **Yao, N. Y.**, *Imaging the local charge environment of nitrogen-vacancy centers in diamond*. Phys. Rev. Lett. **121** 246402 (2018). 
See also the viewpoint by A. Bleszynski Jayich, [Physics](#), **11** 126 (2018).
- [40] Grusdt, F., **Yao, N. Y.**, Demler, E. A., *Topological polarons, quasiparticle invariants and their detection in 1D symmetry-protected phases*. Phys. Rev. B **100**, 075126 (2019)
- [41] **Yao, N. Y.**, Zaletel, M. P., Stamper-Kurn, D. M., Vishwanath, A. *A Quantum Dipolar Spin Liquid*. Nature Physics, **14**, 405-410 (2018).
- [42] **Yao, N. Y.**, Potter, A. C., Potirniche, I.-D., Vishwanath, A., *Discrete Time Crystals: Rigidity, Criticality, and Realizations*. Phys. Rev. Lett., **118** 030401 (2017). 
See also the viewpoint by P. Richerme, [Physics](#), **10** 5 (2017). 
Secondary reports about this work: [New Scientist](#), [Science Daily](#), [Newsweek](#), [Tech Times](#), [Capital Wired](#), [Vice Motherboard](#), [Popular Mechanics](#), [R & D Magazine](#)
- [43] Zhang, J., Hess, P. W., Kyprianidis, A., Becker, P., Lee, A., Smith, J., Pagano, G., Potirniche, I.-D., Potter, A. C., Vishwanath, A., **Yao, N. Y.**, Monroe, C. *Observation of a Discrete Time Crystal*. Nature **543**, 217-220 (2017).
Secondary reports about this work: [Science News](#), [MIT Technology Review](#), [Big Think](#)
- [44] Potirniche, I.-D., Potter, A. C., Schleier-Smith, M., Vishwanath, A., **Yao, N. Y.** *Floquet symmetry-protected topological phases in cold atomic systems*. Phys. Rev. Lett., **119** 123601 (2017).
- [45] **Yao, N. Y.**, Laumann, C. R., Cirac, J. I., Lukin, M. D., Moore, J. E. *Quasi-many-body Localization in Translation Invariant Systems*. Phys. Rev. Lett. **117** 240601 (2016). 

- [46] **Yao, N. Y.**, Gorshkov, A. V., Laumann, C. R., Läuchli, A. M., Ye, J., Lukin, M. D. *Realizing Fractional Chern Insulators with Dipolar Spins*. Phys. Rev. Lett., **110** 185302 (2013).  
- See also the [viewpoint](#) by M. Daghofer and M. Haque, *Physics*, **6** 49 (2013). 
- [47] **Yao, N. Y.**, Jiang, L., Gorshkov, A., Maurer, P., Giedke, G., Cirac, I., and Lukin, M. D, *Scalable Architecture for a Room Temperature Solid-State Quantum Information Processor*. Nature Communications **3**, 800 (2012).
- [48] Zhuang, Q., Schuster, T., Yoshida, B., **Yao, N. Y.**, *Scrambling and Complexity in Phase Space*. Phys. Rev. A **99** 062334 (2019).
- [49] Vermersch, B., Elben, A., Sieberer, L. M., **Yao, N. Y.**, Zoller, P., *Probing scrambling using statistical correlations between randomized measurements*. Phys. Rev. X **9** 021061 (2019).
- [50] **Yao, N. Y.**, Nayak, C., *Time crystals in periodically driven systems*. Physics Today **97**, 9, 40-47 (2018).
- [51] Hetterich, D., **Yao, N. Y.**, Serbyn, M., Pollmann, F., Trauzettel, B., *Detection and characterization of many-body localization in central spin models*. Phys. Rev. B **98** 161122(R) (2018).
- [52] Kirschner, F. K. K., Flicker, F., Yacoby, A., **Yao, N. Y.**, Blundell, S. J., *Proposal for the Detection of Magnetic Monopoles in Spin Ice via Nanoscale Magnetometry*. Phys. Rev. B **97** 140402(R) (2018).
- [53] Choi, S., **Yao, N. Y.**, Lukin, M. D., *Quantum metrology based on strongly correlated matter*. arXiv:1801.00042 (2018)
- [54] Choi, S., Choi, J., Landig, R., Kucsko, G., Zhou, H., Isoya, J., Jelezko, F., Onoda, S., Sumiya, H., Khemani, V., von Keyserlingk, C., **Yao, N. Y.**, Demler, E., Lukin, M. D. *Observation of discrete time-crystalline order in a disordered dipolar many-body system*. Nature **543**, 221-225 (2017).
- [55] Swingle, B., **Yao, N. Y.** *Seeing scrambled spins*. Physics **10**, 82 (2017).
- [56] Ramasesh, V. V., Flurin, E., Rudner, M. S., Siddiqi, I., **Yao, N. Y.** *Direct Probe of Topological Invariants Using Bloch Oscillating Quantum Walks*. Phys. Rev. Lett., **118** 130501 (2017).
- [57] Flurin, E., Ramasesh, V. V., Hacoheh-Gourgy, S., Martin, L. S., **Yao, N. Y.**, Siddiqi, I. *Observing Topological Invariants Using Quantum Walk in Superconducting Circuits*. Phys. Rev. X **7** 031023 (2017).
- [58] Choi, S., **Yao, N. Y.**, Lukin, M. D., *Dynamical engineering of interactions in qudit ensembles*. Phys. Rev. Lett., **119** 183603 (2017).
- [59] Kemp, J., **Yao, N. Y.**, Laumann, C. R., Fendley, P., *Long coherence times for edge spins*. J. Stat. Mech. 063105 (2017).
- [60] Banuls, M.-C., **Yao, N. Y.**, Choi, D., Lukin, M. D., Cirac, J. I., *Dynamics of quantum information in many-body localized systems*. Phys. Rev. B **96** 174201 (2017).
- [61] Grusdt, F., **Yao, N. Y.**, Abanin, D. A., Fleischhauer, M., Demler, E. A. *Interferometric Measurements of Many-body Topological Invariants using Mobile Impurities*. Nature Communications **7**, 11994 (2016).
- [62] Kucsko, G., Choi, C., Choi, J., Maurer, P. C., Sumiya, H., Onoda, S., Isoya, J., Jelezko, F., Demler, E., **Yao, N. Y.**, Lukin, M. D. *Critical thermalization of a disordered dipolar spin system in diamond*. Phys. Rev. Lett. **121** 023601 (2018).
- [63] Choi, J., Choi, S., Kucsko, G., Maurer, P. C., Shields, B. J., Sumiya, H., Onoda, S., Isoya, J., Demler, E., Jelezko, F., **Yao, N. Y.**, Lukin, M. D. *Depolarization dynamics in a strongly interacting solid-state spin ensemble*. Phys. Rev. Lett. **118** 093601 (2017).

- [64] Laumann, C. R., **Yao, N. Y.** *Localization goes long.* Nature Physics **12**, 894 (2016).
- [65] **Yao, N. Y.**, Grusdt, F., Swingle, B., Lukin, M. D., Stamper-Kurn, D. M., Moore, J. E., Demler, E. A. *Interferometric Approach to Probing Fast Scrambling.* arXiv:1607.01801
- [66] **Yao, N. Y.**, Laumann, C. R., Gopalakrishnan, S., Knap, M., Demler, E. A., Lukin, M. D. *Many-body Localization with Dipoles.* Phys. Rev. Lett., **113** 243002 (2014).
- [67] Yuen-Zhou, J., Saikin, S., **Yao, N. Y.**, Aspuru-Guzik, A. *Topologically protected excitons in porphyrin thin films.* Nature Materials, **13** 1026-1032 (2014).
Secondary reports about this work: [SPIE Newsroom](#), [MIT News](#), [Harvard Gazette](#), [Phys.org](#).
- [68] **Yao, N. Y.**, Glazman, L., Demler, E., Lukin, M., Sau, J. D. *Enhanced anti-ferromagnetic exchange between impurities in a superconducting host.* Phys. Rev. Lett. **113** 087202 (2014). 
- [69] Weimer, H., **Yao, N. Y.**, Lukin, M. D. *Collectively Enhanced Interactions in Solid-state Spin Qubits.* Phys. Rev. Lett., **110** 067601 (2013). 
- [70] **Yao, N. Y.**, Laumann, C., Gorshkov, A., Weimer, H., Jiang, L., Cirac, I., Zoller, P., and Lukin, M. D., *Topologically Protected Quantum State Transfer in a Chiral Spin Liquid.* Nature Communications **4**, 1585 (2013).
- [71] Kucsko, G., Maurer, P. C., **Yao, N. Y.**, Kubo, M., Noh, H. J., Lo, P. K., Park, H., and Lukin, M. D., *Nanometre-scale thermometry in a living cell.* Nature **500**, 54-58 (2013).
See also the Nature News & Views by K. Sokolov, [Nature 500, 36-37 \(2013\)](#) **and the Physics Focus** by T. Maciel, [Physics 8, 52 \(2015\)](#).
Secondary reports about this work: [Popular Mechanics](#), [Science and Technology Daily](#), [Phys.Org](#)
- [72] **Yao, N. Y.**, Laumann, C., Gorshkov, Bennett, S. D., Demler, E., Zoller, P., Lukin, M. D. *Topological Flat Bands from Dipolar Spin Systems.* Phys. Rev. Lett., **109** 266804 (2012).
- [73] Wild, D. S., Gopalakrishnan, S., Knap, M., **Yao, N. Y.**, Lukin, M. D. *Adiabatic Quantum Search in Open Systems.* Phys. Rev. Lett., **117** 150501 (2016).
- [74] **Yao, N. Y.**, Laumann, C. R., Vishwanath, A. *Many-body localization protected quantum state transfer.* arXiv:1508.06995
- [75] Khait, I., Gazit, S., **Yao, N. Y.**, Auerbach, A. *Transport of weakly disordered spin chains at infinite temperature.* Phys. Rev. B **93** 224205 (2016).
- [76] Goldman, M. L., Doherty, M. W., Sipahigil, A., **Yao, N. Y.**, Bennett, S. D., Manson, N. B., Kubanek, A., Lukin, M. D. *State-selective intersystem crossing in nitrogen-vacancy centers.* Phys. Rev. B **91** 165201 (2015). 
- [77] Choi, S., **Yao, N. Y.**, Gopalakrishnan, S., Lukin, M. D. *Quantum Control of Many-body Localized States.* arXiv:1508.06992
- [78] **Yao, N. Y.**, Moca, C. P., Weymann, I., Sau, J. D., Lukin, M. D., Demler, E. A., Zarand, G. *Phase diagram and excitations of a Shiba molecule.* Phys. Rev. B **90** 241108(R) (2014).
- [79] **Yao, N. Y.**, Bennett, S. D., Laumann, C. R., Lev, B. I., Gorshkov, A. V. *Bilayer fractional quantum Hall states with ultracold dysprosium.* Phys. Rev. A **92** 033609 (2015).
- [80] Barkeshli, M., **Yao, N. Y.**, Laumann, C. R. *Continuous Preparation of a Fractional Chern Insulator.* Phys. Rev. Lett., **115** 026802 (2015).
- [81] Maghrebi, M. F., **Yao, N. Y.**, Hafezi, M., Pohl, T., Firstenberg, O., Gorshkov, A. V. *Fractional Quantum Hall States of Rydberg Polaritons.* Phys. Rev. A **91** 033838 (2015).

- [82] **Yao, N. Y.**, Broedersz, C., Depken, M., Becker, D. J. Pollak, M., MacKintosh, F., and Weitz, D., *Stress-enhanced gelation: A dynamic nonlinearity of elasticity*. Phys. Rev. Lett., **110** 018103 (2013).
- [83] Peter, D., **Yao, N. Y.**, Lang, N., Huber, S. D., Lukin, M. D., Buchler, H. P. *Topological flat bands with Chern number $C=2$ by dipolar exchange interactions*. Phys. Rev. A **91** 053617 (2015).
- [84] **Yao, N. Y.**, Becker, D. J., Broedersz, C., Depken, M., Pollak, M., MacKintosh, F., and Weitz, D., *Non-linear viscoelasticity of α -actinin-4 cross-linked actin*. Journal of Molecular Biology, **411** 1062-1071 (2011).
- [85] **Yao, N. Y.**, Gong, Z.-X., Laumann, C. R., Bennett, S. D., Duan, L.-M., Lukin, M. D., Jiang, L., Gorshkov, A. V. *Quantum Logic between Remote Quantum Registers*. Phys. Rev. A, **87** 022306 (2013).
- [86] Goldman, M. L., Sipahigil, A., **Yao, N. Y.**, Bennett, S. D., Markham, M., Twitchen, D. J., Kubanek, A., Lukin, M. D. *Phonon-Induced Population Dynamics and Intersystem Crossing in Nitrogen-Vacancy Centers*. Phys. Rev. Lett., **114** 145502 (2015).
- [87] Hodges, J. S., **Yao, N. Y.**, Maclaurin, D., Rastogi, C., Lukin, M. D., Englund, D. *Timekeeping with electron spin states in diamond*. Phys. Rev. A, **87** 032118 (2013).
See also the [synopsis](#) by M. Rini, [Diamond Clocks on a Chip](#). 
- [88] Lemeshko, M., **Yao, N. Y.**, Gorshkov, A., Weimer, H., Bennett, S. D., Momose, T. and Gopalakrishnan, S., *Controllable quantum spin glasses with magnetic impurities embedded in quantum solids*. Phys. Rev. B **88**, 014426 (2013).
- [89] Maurer, P. C., Kuscko, G., Latta, C., Liang, J., **Yao, N. Y.**, Bennett, S. D. *et al.* *Multi-second quantum memory based upon a single nuclear spin in a room temperature solid*. Science **336** 1283-1286 (2012).
See also the [Science Perspective](#) by C. Boehme and D. R. McCamey, [Science](#) **336**, 1239-1240 (2012).
Secondary reports about this work: [Scientific American](#), [Photonics Media](#), [Phys.Org](#), [Science Daily](#)
- [90] Bennett, S. D., **Yao, N. Y.**, Otterbach, J., Zoller, P., Rabl, P., Lukin, M. D. *Phonon-induced spin-spin interactions in diamond nanostructures: application to spin squeezing*. Phys. Rev. Lett., **110** 156402 (2013).
- [91] Hazzard, K., Gadway, B., Foss-Feig, M., Moses, S., Covey, J., **Yao, N. Y.**, Lukin, M. D., et al. *Many-body dynamics of dipolar molecules in an optical lattice*. Phys. Rev. Lett., **113** 195302 (2014).
- [92] Serbyn, M., Knap, M., Gopalakrishnan, S., Papic, Z., **Yao, N. Y.**, Laumann, C. R., et al. *Interferometric probes of many-body localization*. Phys. Rev. Lett., **113** 147204 (2014).
- [93] Pastawski, F., **Yao, N. Y.**, Jiang, L., Cirac, J. I., and Lukin, M. D., *Unforgeable noise-tolerant quantum tokens*. Proc. Natl. Acad. Sci., **109** 16079-16082 (2012)
Secondary reports about this work: [NBC News](#), [Phys.Org](#), [Science Daily](#)
- [94] **Yao, N. Y.**, Broedersz, C., Lin, Y., Kasza, K., MacKintosh, F., and Weitz, D., *Elasticity in Ionically Cross-linked Neurofilament Networks*. Biophysical Journal, **98** 2147-2153, (2010)
- [95] Weimer, H., **Yao, N. Y.**, Laumann, C., and Lukin, M., *Long-range quantum gates using dipolar crystals*. Phys. Rev. Lett. **108**, 100501 (2012).
- [96] **Yao, N. Y.**, Jiang, L., Gorshkov, Gong, Z.-X., A., Zhai, A., Duan, L.-M., and Lukin, M. D., *Robust Quantum State Transfer in Random Unpolarized Spin Chains*. Phys. Rev. Lett., **106** 040505 (2011).
- [97] Broedersz, C., Depken, M., **Yao, N. Y.**, Pollak, M., Weitz, D., *Cross-link governed dynamics of biopolymer networks*. Phys. Rev. Lett. **105** 238101 (2010).

- [98] Lin, Y., **Yao, N. Y.**, Broedersz, C., Herrmann, H., MacKintosh, F., and Weitz, D., *Origins of elasticity in intermediate filament networks*. *Phys. Rev. Lett.* **104**, 058101 (2010)
- [99] **Yao, N. Y.**, Larsen, R., and Weitz, D., *Probing nonlinear rheology with inertio-elastic oscillations*. *Journal of Rheology* **52**, 1013-1025 (2008).
- [100] Artigas, F., Marti, A., **Yao, N. Y.**, and Pechmann, I., *Chlorophyll Detection and Mapping of Shallow Water Impoundments Using Image Spectrometry*. *Research Letters in Ecology*, 146217, 4, (2008).