

# Stanford

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## Feng Ke

- Phys Sci Res Assoc, Stanford Institute for Materials and Energy Sciences
- Postdoctoral Scholar, Geological Sciences

### Bio

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#### ACADEMIC APPOINTMENTS

- Phys Sci Res Assoc, Stanford Institute for Materials and Energy Sciences

#### PROFESSIONAL EDUCATION

- Doctor of Philosophy, Jilin University (2015)

### Research & Scholarship

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#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

I mainly focus on the electrical transport and optical properties of low-dimensional materials at extreme conditions, such as ultra-high pressure, low temperature, high magnetic-fields.

### Publications

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#### PUBLICATIONS

- **Engineering Bright and Mechanosensitive Alkaline-Earth Rare-Earth Upconverting Nanoparticles.** *The journal of physical chemistry letters*  
McLellan, C. A., Siefe, C., Casar, J. R., Peng, C. S., Fischer, S., Lay, A., Parakh, A., Ke, F., Gu, X. W., Mao, W., Chu, S., Goodman, M. B., Dionne, et al  
2022; 1547-1553
- **Conduction transition and electronic conductivity enhancement of cesium azide by pressure-directed grain boundary engineering** *JOURNAL OF MATERIALS CHEMISTRY C*  
Wang, Q., Wang, X., Li, J., Qin, T., Sang, D., Liu, J., Ke, F., Wang, X., Li, Y., Liu, C.  
2021
- **Superionic iron oxide-hydroxide in Earth's deep mantle** *NATURE GEOSCIENCE*  
Hou, M., He, Y., Jang, B., Sun, S., Zhuang, Y., Deng, L., Tang, R., Chen, J., Ke, F., Meng, Y., Prakapenka, V. B., Chen, B., Shim, et al  
2021; 14 (3): 174+
- **Pressure-induced excimer formation and fluorescence enhancement of an anthracene derivative** *JOURNAL OF MATERIALS CHEMISTRY C*  
Dai, Y., Liu, H., Geng, T., Ke, F., Niu, S., Wang, K., Qi, Y., Zou, B., Yang, B., Mao, W. L., Lin, Y.  
2021; 9 (3): 934-38
- **Preserving a robust CsPbI3 perovskite phase via pressure-directed octahedral tilt.** *Nature communications*  
Ke, F. n., Wang, C. n., Jia, C. n., Wolf, N. R., Yan, J. n., Niu, S. n., Devereaux, T. P., Karunadasa, H. I., Mao, W. L., Lin, Y. n.  
2021; 12 (1): 461
- **Synthesis of Atomically Thin Hexagonal Diamond with Compression.** *Nano letters*  
Ke, F., Zhang, L., Chen, Y., Yin, K., Wang, C., Tzeng, Y., Lin, Y., Dong, H., Liu, Z., Tse, J. S., Mao, W. L., Wu, J., Chen, et al  
2020

- **Negative Differential Resistance of n-ZnO Nanorods/p-degenerated Diamond Heterojunction at High Temperatures.** *Frontiers in chemistry*  
Sang, D. n., Liu, J. n., Wang, X. n., Zhang, D. n., Ke, F. n., Hu, H. n., Wang, W. n., Zhang, B. n., Li, H. n., Liu, B. n., Wang, Q. n.  
2020; 8: 531
- **Tuning Optical and Electronic Properties in Low-Toxicity Organic-Inorganic Hybrid (CH<sub>3</sub>NH<sub>3</sub>)(**3**)Bi<sub>2</sub>I<sub>9</sub> under High Pressure** *JOURNAL OF PHYSICAL CHEMISTRY LETTERS*  
Zhang, L., Liu, C., Lin, Y., Wang, K., Ke, F., Liu, C., Mao, W. L., Zou, B.  
2019; 10 (8): 1676–83
- **Tuning Optical and Electronic Properties in Low-Toxicity Organic-Inorganic Hybrid (CH<sub>3</sub>NH<sub>3</sub>)(**3**)Bi<sub>2</sub>I<sub>9</sub> under High Pressure.** *The journal of physical chemistry letters*  
Zhang, L., Liu, C., Lin, Y., Wang, K., Ke, F., Liu, C., Mao, W. L., Zou, B.  
2019: 1676–83
- **Phase transformations of Al-bearing high-entropy alloys Al<sub>x</sub>CoCrFeNi (x=0, 0.1, 0.3, 0.75, 1.5) at high pressure** *APPLIED PHYSICS LETTERS*  
Wang, C., Tracy, C. L., Park, S., Liu, J., Ke, F., Zhang, F., Yang, T., Xia, S., Li, C., Wang, Y., Zhang, Y., Mao, W. L., Ewing, et al  
2019; 114 (9)
- **Mechanosensitive upconverting nanoparticles for visualizing mechanical forces in vivo**  
Lay, A., Siefe, C., Fischer, S., Mehlenbacher, R., Das, A., Nekimken, A., Ke, F., Mao, W., Pruitt, B., Cohen, B., Alivisatos, P., Goodman, M., Dionne, et al  
AMER CHEMICAL SOC.2018
- **Bright, Mechanosensitive Upconversion with Cubic-Phase Heteroepitaxial Core-Shell Nanoparticles.** *Nano letters*  
Lay, A. n., Siefe, C. n., Fischer, S. n., Mehlenbacher, R. D., Ke, F. n., Mao, W. L., Alivisatos, A. P., Goodman, M. B., Dionne, J. A.  
2018