



Name: **Di**

Surname: **Zhou**

Gender: Female

Date of birth: 29.08.1993

Nationality: China

Phone: (+86) 13756080732; (+7)9264064795

E-mail: D.Zhou@skoltech.ru; zhoudi17@mails.jlu.edu.cn

## CURRICULUM VITAE

### Education

- ✧ Sep. 2015 – Jun. 2020: Jilin University, School of Physics, specialization: condensed matter physics (PhD)  
Thesis title: “High-pressure studies of typical lanthanide superhydrides”
- ✧ Sep. 2011 – Jun. 2015: Jilin University, School of Physics, specialization: physics (Bachelor)

### Working Experience

Feb. 2021 – present: Research Scientist, Skoltech (Russia, Moscow)

### Languages

- ✧ Chinese (native)
- ✧ English (upper-intermediate, CET 6)
- ✧ Korean (pre-intermediate)
- ✧ Russian (beginner)

### Professional skills

#### High pressure experimental skills

- ✧ Preparation of diamond anvil cells (DACs, 0-200 GPa) including assembling the cells for electrical measurements with 2-4 electrodes.
- ✧ Using gas loading systems for H<sub>2</sub>, N<sub>2</sub>, Ar for high-pressure experiments.
- ✧ Operating high-temperature and high-pressure *in-situ* Brillouin scattering system.
- ✧ Experienced user of high-pressure synchrotron X-ray radiation facilities: Beijing Synchrotron Radiation Device W2 beamline and Shanghai Synchrotron Radiation Light Source BL15U Beamline.
- ✧ High-pressure confocal Raman scattering in diamond anvil cells (DACs) including low-temperature protocol.
- ✧ Infrared micro-detection system for DACs

#### Experienced user of related software

- XRD data processing: Jade, Dioptas, fit2d,
- Structural search: CASTEP and REFLEX in Materials Studio, Jana2006, VESTA
- Mathematical modeling: Origin, Igor Pro, Matlab

Have an experience on using VASP, Quantum ESPRESSO, EPW, Phonopy and USPEX codes to do DFT structural relaxation, drawing of convex hull diagrams, calculations of charge density maps and electron/phonon band structures, as well as parameters of superconducting state, Eliashberg functions, and magnetic structure.

## Research

1. Xin Li, Xiaoli Huang, Wuhao Chen, Di Zhou, Hui Xie, Quan Zhuang, Defang Duan and Tian Cui. New Cage-Like Cerium Trihydride Stabilized at Ambient Conditions. *CCS Chemistry* 3, 1012–1018 (2021).
2. Di Zhou, Dmitrii V. Semenov, Hui Xie et al. Superconducting Praseodymium Superhydrides. *Science Advances* 6: eaax6849 (2020). IF = 12.80.
3. Di Zhou, Dmitrii V. Semenov, Hui Xie et al. High-Pressure Synthesis of Magnetic Neodymium Polyhydrides, *JACS* 142, 2803–2811 (2020). IF = 14.69
4. Xin Li, Xiaoli Huang, Defang Duan, Chris J. Pickard, Di Zhou, Hui Xie et al. Polyhydride CeH<sub>9</sub> with an atomic-like hydrogen clathrate structure *Nature Communication* 10, 3461 (2019). IF = 11.88.
5. Dmitrii V Semenov; Di Zhou; Alexander G. Kvashnin et al. Novel Strongly Correlated Europium Superhydrides, *The journal of physical chemistry letters*, 12, 32-40 (2020). IF = 6.71. first coauthor.
6. Xin Li, Yanping Huang, Shuli Wei, Di Zhou et al., New Phase of Ca(BH<sub>4</sub>)<sub>2</sub> at Near Ambient Conditions, *The Journal of Physical Chemistry C* 122, 26 (2018). IF = 4.31.
7. Mengya Lu, Di Zhou, Fangfei Li et al. Disorder-order structural transition of single crystal hydrogen chloride under high pressure-temperature. *Physical Chemistry Chemical Physics* 21, 32 (2019). IF = 3.567
8. Di Zhou, Xiaoli Huang, Xin Li et al. Elastic properties of single crystal hydrogen sulfide: A Brillouin scattering study under high pressure-temperature. *Journal of Applied Physics* 124, 125901 (2018). IF = 2.33
9. Yanping Huang, Xiaoli Huang, Xin Wang, Wenting Zhang, Di Zhou, Structural Transitions in NaNH<sub>2</sub> via Recrystallization under High Pressure, *Chinese Physics B* 28, 9 (2019). IF = 1.469.
10. Can Tian, Xiao-li Huang, Yan-ping Huang, Xin Li, Di Zhou et al High-Pressure Behavior of Nano-Pt in Hydrogen Environment, *Chinese Physics Letters* 36,10:106101 (2019). IF = 1.07.
11. Mingkun Liu, Xiaoli Huang, Xin Wang, Yanping Huang, Fangfei Li, Gang Wu, Xin Li, Yongfu Liang, Di Zhou, Mengya Liu, Bingbing Liu and Tian Cui, Unravelling decomposition products of phosphine under high pressure. *Journal of Raman Spectroscopy* 49, 4 (2018). IF = 2.81.

## Conferences

- ✧ September 2016, Beijing, China, Fall Academic Conference of Chinese Physical Society (Excellent Poster Award)
- ✧ September 2016, Mianyang, China, The 14th National Physical Dynamics Conference
- ✧ August 2017, Beijing, China, The 26th International Conference on High Pressure Science and Technology
- ✧ August 2018, Singapore, 9th Asian High Pressure Technology Conference (Excellent Poster Award)
- ✧ May 2019, Hefei, China 4th International Conference on Extreme Materials and Radiation
- ✧ August 2019, Rio-de-Janeiro, Brazil, 27th International Conference of the AIRAPT
- ✧ December 2019, Macao, China, IAPME-SKLSHM Joint Workshop on Physical Properties of Novel Materials and its High Pressure Tuning.

## **Grants**

- ✧ 1197040876, Study of chemistry and superconductivity lanthanide and rare-earth hydrides and superconductivity under high pressure, National key research and development project (2016YFB0201204, China)
- ✧ 20-53-53006 HPHEN Investigation of structure and superconductivity of metal borides at ultrahigh pressure (China)

## **Awards and certificates**

- ✧ Jilin University graduate national scholarship, December 2015
- ✧ Postgraduate academic scholarship 2015-2019