LINQIAO WANG

+86-15562190096;

EDUCATION

Shandong University (SDU) 09/2021-07/2025
SDU-ANU Joint Science College
Bachelor of Science in Applied Physics (GPA:88.24/100, Ranking: 12/81)
Academic awards: **SDU Second Grade Academic Scholarship** in October 2022 , 2023 and 2024.
The Third Prize in the 17th Undergraduate Research Training Program of Shandong University.

National University of Singapore (NUS). 08/2025-05/2026
Faculty of Science
Master of Science in Physics

PROJECT

Optimization Design of High-Power Solid-State Raman Lasers. 09/2024-03/2025

- Supervisor: Dr. Yunzheng Wang (Institute of Advanced Optics, SDU)
- Intracavity frequency-doubled solid-state Raman lasers utilize the second-harmonic generation (SHG) effect to double the frequency of first-order Raman scattered light, enabling efficient output at specific wavelengths. This is a key branch of solid-state Raman lasers. By using the stimulated Raman scattering (SRS) effect in a Raman crystal, 1064 nm laser light from a Nd-doped laser crystal is converted to 1180 nm and then frequency-doubled to generate yellow light around 590 nm. This wavelength has important applications in fields such as LiDAR and healthcare, including corneal surgery and as a reference signal for specialized frequency standards.
- This study uses Nd:YVO_4 as the gain medium to generate 1064 nm laser light, followed by Raman frequency conversion in YVO_4 Raman crystal. The frequency-doubled output is then achieved using a lithium triborate (LBO) crystal, resulting in a stable yellow laser output.Determined the frequency of the RF field and measured the magnetic field value through the relationship between the magnetic resonance frequency and the magnetic field
- To enhance output power, this experiment utilizes Rezonator, COMSOL, and MATLAB for simulations to optimize cavity mirror selection and cavity length. It analyzes the thermal lensing effect in the laser crystal, calculates intracavity beam size and stability range, and measures the thermal lens focal length to refine the resonator design of the solid-state Raman laser. By mitigating thermal effects, optimal output coupling is achieved, enabling high-power continuous yellow laser output. Ultimately, the laser cavity is designed to handle pump power exceeding 50 W, achieving an output power of over 10 W.

Geomagnetic Field Modeling and Validation of Energy Level Transition Test 05/2023-05/2024

- Supervisor: Dr. Weixin Liu (School of Space Science and Physics, SDU)
- Based on the Zeeman effect of alkali metal atomic (e.g. cesium atoms) energy levels in a magnetic field, used the optical pumping action and the magnetic resonance action to realize the magnetic measurement and establish a model to predict the geomagnetic field changes
- When the optical pumping action made the atoms realize optical orientation, the magnetic resonance effect was introduced by adding a radio frequency field; the magnetic resonance can make the oriented

atoms undergo magnetic resonance transition
- Determined the frequency of the RF field and measured the magnetic field value through the relationship between the magnetic resonance frequency and the magnetic field

Characteristic Study of Optical Pumping on Fine Zeeman Level Transition 05/2022-05/2023
- Supervisor: Dr. Weixin Liu (School of Space Science and Physics, SDU)
- Combined the Zeeman effect with laser light, taking 632.8 nm red light emitted by a He-Ne dual-frequency laser as a light source and utilizing the longitudinal Zeeman effect of neon atoms to build an experimental system to observe the generation of the Zeeman effect and calculated the Lund's g-factor
- Aimed to help students better observe the microscopic world, perceive the splitting of energy levels and calculate the splitting space, and provide reference for the experimental teaching of the Zeeman effect
- Participated in pre-research, purchasing and building experimental equipment, and experiment design
- Distinguished as a **Third Prize SDU Student Research Training Program**

SDU Summer Holiday Social Practice Program 07/2022-08/2022
- Worked as the team leader to allocate tasks, organize discussions, and produce project report
- Designed a questionnaire to investigate the implementation of the national policy to ease the burden of excessive homework and off-campus tutoring for students undergoing compulsory education
- Organized online interviews and field surveys at over 10 primary and high schools in Linyi City to collect data on the actual situation of implementing Double-Reduction Policy in the southern part of Shandong Province and analyze the deviation from the ideal and the root causes
- Distinguished as an **Excellent Social Practice Team at Shandong University** in November 2022

SKILLS

Fluent in English, as the medium of instruction at SDU-ANU Joint Science College
Familiar with basic computing and professional tools i.e., Comsol, reZonator, Lascad, Soildworks, C++, MATLAB, Materials Studio, and Origin.