# Chen-Zhu Xie

# 谢尘竹

Portfolio: 🗘 🔼 in

Scholar:  $\Gamma$ 

Preference: 6

Contact:  $\mathbf{\Sigma}$   $\mathbb{X}$ 

Personality: aries INTP ab

#### **EDUCATION**

Nanjing University	College	ciences Nanjing, Jiang	su	
Doctor of Philosophy	Optical Engineering	Q.E Top 15%	Nonlinear Fourier Optics ( 2025 '2	27
L Thesis - Analytic 3D vectorial linear non-uniform & nonlinear Fourier crystal optics in arbitrary $\bar{\bar{\epsilon}}, \bar{\bar{\chi}}$ dielectrics $oldsymbol{Q}$				
Master 's Studies	Quantum Electronics	Courses Score - 93.5 😱	THz (> 6G) OAM Source <b>?</b> 2022 '2	24
Northeastern University School of Physics, College of Science Shenyang, Liaoning				
Northeastern Onive	rsity Sch	ool of Physics, College of Sci	ence Shenyang, Liaonii	ng
Bachelor of Science	Applied Physics	ool of Physics, College of Sci GPA Rank - 1/400	DDTank Aimbots 2020 '2	
Bachelor of Science	Applied Physics	GPA Rank - 1/400 <b>(?)</b>		22

# **PROJECTS**

Memberships test test test test test test	test test test test test test test test	2017.03 – 2018.9
Memberships	test test test test test test test test test	2017.03 – 2018.9

# SCIENTIFIC ACTIVITIES

Head Teaching Assistant at University Name
 Course Name (COURSE CODE)

Spring 2019

• Teaching Assistant at University Name

Course Name (COURSE CODE)

Spring 2017

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# ACADEMIC FOCUS

Next generation high N.A. 3D vector non-uniform an	alytic linear & nonlinear Fourier crystal optics 🞧	2024.06
Paraxial $k_0^\omega$ High N.A. 3D vector non-uniform an	alytic linear & nonlinear Fourier crystal optics 🕥	2024.03
Emphasizing $G_{\mathrm{xyz}}^{\omega}$ 3D vector non-uniform an	alytic linear & nonlinear Fourier crystal optics 🕥	2023.12
Involving $ar{ar{\chi}}^{(2)}_\omega$ anisotropy <b>Vector</b> non-uniform an	alytic linear & nonlinear Fourier crystal optics 🕥	2023.06
!Unitary $G^\pm_\omega \Leftarrow$ !Hermitian $ar{ar{arepsilon}}^\omega_{ m r} \Rightarrow$ Non-uniform an	alytic linear & nonlinear Fourier crystal optics 🕥	2023.03
Solution $\mathcal{F}\left[m{E}_{\omega}^{\pm} ight]$ to $\left(m{ abla}^2+k_{\omega\pm}^2 ight)m{E}_{\omega}^{\pm}\proptom{P}_{\omega\pm}^{(2)}$	alytic linear & nonlinear Fourier crystal optics 🕥	2022.09
Solution $\mathcal{F}\left[E_{3}\right]=\mathcal{F}\left[f\left(\mathcal{F}^{-1}\left[\cdot\right]\right)\right]$ to the Eq. below	Nonlinear angular spectrum theory for SFG 🕥	2022.06
Solution $\mathcal{F}\left[E_{3}\right]=\iiint$ to $\left(\mathbf{\nabla}^{2}+k_{3}^{2}\right)E_{3}\left(\mathbf{r}\right)\propto P_{3}^{\left(2\right)}\left(\mathbf{r}\right)$	<b>Nonlinear</b> convolution solution to SFG $\Box$	2022.03
$oldsymbol{igoplus}$ Nonlinear THz LiNbO $_3$ -based metasurface	Quit THz project formally $-$ COMSOL	2022.01
🕠 BWOPO + THz optical parametric amplification	${\it Mathematica-BookxNote\ Pro}$	2021.12
🕥 THz backward optical parametric oscillator (BWOPG	O) Mathematica — VBA Excel	2021.11
🕥 Multi-cycle THz orbital angular momentum (OAM)	source RoamEdit — Blender	2021.11
🕠 Narrow-band THz OAM source via Optical Rectifica	tion (OR) Python — Blender	2021.10
$\bigcirc$ Electricity $\xrightarrow{\text{produce}}$ Acoustics $\xrightarrow{\text{modulate}}$ Optics	${\sf RoamEdit-VBA\;Excel}$	2021.07
$\bigcirc$ Visible Photons $\xrightarrow{ ext{SPDC}}$ THz Spectroscopy	Bookx Note Pro — Geo Gebra — VBA Excel	2021.06
Cavity Phase Matching = Sheet OPO	Paint 3D — Roam Edit — Geo Gebra — VBA Excel	2021.05
🕥 THz Holography via Optical Rectification	${\it Matlab-GeoGebra-VBA\ Excel}$	2021.01
$igcap$ Femtosecond laser $\xrightarrow{ ext{Optical Rectification}}$ Terahertz (THz)	${\it GeoGebra-VBA\ Excel}$	2020.12
$oldsymbol{igoplus}$ Multicycle THz pulse generation by OR in LiNbO $_3$	crystals VBA PowerPoinT	2020.10

Skills Languages

• **Skill Group:** List of technologies

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• Language: language proficiency level

- EXAM: details

• Language: language proficiency level

• Language: language proficiency level

#### Honors & Awards

A J	Doctor's Qualification Exam (Oral)	Excellent (	Top 15%	Nanjing U.	2024.01
Academia	Bachelar Dissertation 🞧 & Defense 🔼	Excellent 🙃	1/90	Northeastern U.	2020.06
Compatition	Three Provinces Achievement Expo	Exhibition (7)	Leader	Three Prov.	2019.10
Competition	"Challenge Cup" Tech Competition	Grand prize 🞧	Leader	Liaoning Prov.	2019.06
Scholarships	Academic Fellowship	1st class	¥40,000	Nanjing U.	2020-24
&	"Jinchuan" Scholarship	1st place	¥5,000	Northeastern U.	2019.04
Fellowships	Academic Scholarship	1st place 🕠	¥2,000	Northeastern U.	2018.06
renowships	Entrance Scholarship	3rd place	¥5,000	Leshan No.1 H.S.	2013.09
Honors	Graduation with honor	Outstanding		Northeastern U.	2020.07
&	League Member	Excellent 🕤		Northeastern U.	2019.11
Titles	Undergraduate Student	Excellent (?)		Northeastern U.	2018.12
Mambanahina	Chinese Society for Optical Engineering	Member 🕠		Nanjing U.	2021-25
Memberships	"Qian Sanqiang" Talent Class	Head 🌐		I.H.E.P.	2017-20

#### Extracurricular Activities

•	Member at Some Club	2017–Current
	Detailed explanation of what you do at this club	

• Member at Some Club

Detailed explanation of what you do at this club

2016–2017

• Volunteer at Some Event Fall 2019

• Volunteer at Some Event Winter 2015

Detailed explanation of what you do in this event

Detailed explanation of what you do in this event