

长 春 理 工 大 学
博士研究生学位论文送审申请表

学 号		所在学院		学科专业	
姓 名		研究方向		联系电话	
论文题目				指导教师	
成绩是否合格		开题通过 时间		中期通过时间	

读博期间发表论文、科研获奖、授权专利、出版学术专著等情况

期 刊	论文题目	期刊名称	发表时间、检索情况、检索号	排名
会 议	论文题目	会议名称	发表时间、检索情况、检索号	排名
获 奖	成果名称	颁奖部门、奖励级	获奖时间	排名
专 利	成果名称	专利类型	授权时间	排名
著 作	著作名称	出版社	出版时间	排名

博士学位论文送审申请:

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论文是否涉密： 是 ☐ 否 ☐

指导教师签字:

年 月 日

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预答辩是否通过：是 ☐ 否 ☐

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学位分委员会主席签章： (公章)

年 月 日

1、成绩单截图

研究生教育管理系统

学生

学生课程成绩查询

基本概况

培养管理

我的课表

学生考场安排信息查询

学生课程成绩查询

中期考核学生申请

重修重考

学位外语申请

培养计划完成情况

硕士生选学申请

开题申请

网上评教

培养管理

学生课程成绩查询

我的成绩信息

红色的课程成绩在成绩单中不会打印

课程类别	课程编号	课程	学分	考试成绩	是否及格	考试性质	考试日期	备注
公共必修课	B11990011	第一外语	3	83	及格	期末考试		
	B1199001A	第一外语 (复考)	0	48	及格	期末考试	2021-12-18	
	B1199001B	第一外语 (补考)	0	35	及格	期末考试	2021-12-30	
	B11990021	中国马克思主义与当代	2	90	及格	期末考试	2021-12-23	
专业基础课	B1206005	光电功能材料前沿进展	3	94	及格	期末考试	2021-12-22	
专业选修课	B2205001	先进陶瓷材料	2	91	及格	期末考试	2021-12-27	
	B2205014	纳米材料与纳米器件	2	95	及格	期末考试	2021-12-27	
	B1306001	现代设计艺术基础	1	成绩未录入				
	B1306002	创新实践	3	成绩未录入				
必修环节	B1306003	导师方向课	2	成绩未录入				

学分统计信息: (总学分: 12.0 学分课学分: 8.0)

2、开题审核通过截图

研究生教育管理系统

学生

学生课程成绩查询

开题申请

中期考核学生申请

基本概况

培养管理

我的课表

学生考场安排信息查询

学生课程成绩查询

中期考核学生申请

重修重考

学位外语申请

培养计划完成情况

硕士生选学申请

开题申请

网上评教

培养管理

开题申请

开题申请信息

学号	B2106	姓名		年级	2021级
学生类别	学术学位博士	院系	材料科学与工程学院	专业	材料科学与工程
入学季节	秋季入学	专业方向		指导教师	
论文题目(*)					
论文类型(*)	综合研究	论文选题来源(*)	曾 (自治区、直辖市)	密级(*)	公开
论文预计开始时间	2022-03-01	论文预计结束时间	2024-06-01	开题时间(*)	2022-07-06
是否通过	通过	审核状态	归档	申请时间	2022-07-08

附件信息 (注: 可上传docx文件):
B21060142(即申请开题报告.doc)

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研究生教育管理系统

学生

学生课程成绩查询

开题申请

中期考核学生申请

基本概况

培养管理

我的课表

学生考场安排信息查询

学生课程成绩查询

中期考核学生申请

重修重考

学位外语申请

培养计划完成情况

硕士生选学申请

开题申请

网上评教

培养管理

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中期考核学生申请

中期考核申请时间: 2022-2023 学年 第二学期 2023-05-01至2023-08-31

当前学期考核情况: 审核通过 查看

中期考核说明:

该检索报告是学术成果中的第一条

检 索 报 告

一、检索要求

- 1. 委 托 人:
- 2. 委托单位: 长春理工大学
- 3. 检索目的: 论文被数据库收录及所在期刊影响因子、分区情况

二、检索范围

Science Citation Index Expanded (SCI-EXPANDED)	1975-present	网络版
Web of Science	1975-present	网络版
JCR-(Journal of Citation Report)-IF(Impact Factor)	2020	网络版
中国科学院文献情报中心期刊分区表	2020	网络版

三、检索结果

委托人提交的 1 篇论文被 SCI-E 数据库所收录, 其收录及所在期刊影响因子、中科院分区情况见附件一。

特此证明!



检索报告人: 李海斌

李海斌

2021 年 8 月 29 日

附件一: 被 SCI-E 数据库收录及所在期刊影响因子、分区情况

标题: Syntheses and characterization of phthalocyanines & Naphthopyrans based polymers for improved nonlinear optical properties

作者: [redacted] (通讯作者); Dong, WY (Dong, Wenyue); Gao, B (Gao, Bo); Liu, DJ (Liu, Dajun); Duan, Q (Duan, Qian)

第一作者

来源出版物: DYES AND PIGMENTS 卷: 182 文献号: 108662 DOI: 10.1016/j.dyepig.2020.108662 出版年: NOV 2020

Web of Science 核心合集中的 "被引频次": 2

被引频次合计: 2

摘要: In this paper, four organic polymers of poly [(MMA)(x)-co-(NPMA)(y)-co-(CPMA)(z)] and four zinc phthalocyanine (ZnPc) polymers of poly [(MMA)(x)-co-(NPMA)y-co-(ZnPc)(z)] have been successfully synthesized by reversible addition-fragmentation chain transfer (RAFT) polymerization, where MMA is methyl methacrylate, NPMA is 3,3-diphenyl-8-methacryloxy-3H-naphtho [2,1-b]pyran, and CPMA is 3,4-dicyanophenyl methacrylate. The components of these polymers have been fully characterized by ¹H- and ¹³C-NMR, FT-IR, Raman, XPS, UV-Vis, and photoluminescence (PL) spectroscopy. From PL spectra, poly [(MMA)(x)-co-(NPMA)(y)-co-(ZnPc)(z)] polymers display strong fluorescence quenching by the energy transfer (ET) process between NPMA and ZnPc moieties. The third order nonlinear optical (NLO) properties of poly [(MMA)(x)-co-(NPMA)(y)-co-(ZnPc)(z)] polymers have been investigated by the Z-scan technique, and poly [(MMA)168-co-(NPMA)5.2-co-(ZnPc)(1.2)] (Q4) showed the best NLO properties owing to the much stronger ET between NP and ZnPc units. Furthermore, it is essential to obtain doped poly (methyl methacrylate) (PMMA) films for practical application. The poly [(MMA)168-co-(NPMA)5.2-co-(ZnPc)(1.2)]/PMMA film exhibited a higher nonlinear absorption coefficient of 61×10^{-11} m/W and a lower limiting threshold of 0.19 J/cm². The significantly enhanced NLO properties of poly [(MMA)168-co-(NPMA)5.2-co-(ZnPc)(1.2)]/PMMA film compared with solution are attributed to the weaker aggregation effect in PMMA film. This research provides a promising molecular design strategy for high performance NLO materials.

入藏号: WOS:000564524200006

语言: English

文献类型: Article

作者关键词: Phthalocyanine; Naphthopyran; RAFT; Nonlinear optical property; Z-scan

KeyWords Plus: PERIPHERAL SUBSTITUENTS; ZINC PHTHALOCYANINES; LIMITING PROPERTIES; CENTRAL METALS; QUANTUM DOTS; THIN-FILMS; BENZOTHAZOLE; INDIUM; BENZIMIDAZOLE; NANOPARTICLES

地址: [Wang, Jihua; Dong, Wenyue; Gao, Bo; Duan, Qian] Changchun Univ Sci & Technol, Sch Mat Sci & Engn, Changchun 130022, Peoples R China.

[Liu, Dajun] Changchun Univ Sci & Technol, Sch Chem & Environm Engr, Changchun 130022, Peoples R China.

[redacted] Minist Educ, Engr Res Ctr Optoelect Funct Mat, Changchun 130022, Peoples R China.

通讯作者

通讯作者地址: Duan, Q (通讯作者), Changchun Univ Sci & Technol, Sch Mat Sci & Engn, Changchun 130022, Peoples R China.

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Impact Factor (2020): 4.889

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Open Access	否
Web of Science	SCIE

期刊分区

	学科	分区	Top期刊
大类	材料科学	2	是
	MATERIALS SCIENCE, TEXTILES 材料科学: 纺织	1	
小类	CHEMISTRY, APPLIED 应用化学	2	-
	ENGINEERING, CHEMICAL 工程: 化工	2	
---The End---			

该检索报告是学术成果中的第二条

检 索 报 告

一、检索要求

1. 委 托 人: ,
2. 委托单位: 长春理工大学
3. 检索目的: 论文被数据库收录及所在期刊影响因子、分区情况

二、检索范围

Science Citation Index Expanded (SCI-EXPANDED)	1975-present	网络版
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JCR-(Journal of Citation Report)-IF(Impact Factor)	2020	网络版
中国科学院文献情报中心期刊分区表	2020	网络版

三、检索结果

委托人提交的 1 篇论文被 SCI-E 数据库所收录, 其收录及所在期刊影响因子、中科院分区情况见附件一。

特此证明!



检索报告人: 李海斌

李海斌

2021 年 8 月 29 日

附件一：被 SCI-E 数据库收录及所在期刊影响因子、分区情况

标题: Syntheses and nonlinear optical behavior of four-arm star-shaped indium polymers containing azobenzene

第一作者

作者: W [redacted] (Wang, Jiahua); Dong, WY (Dong, Wenyue); Chen, QY (Chen, Qiyue); Si, ZJ (Si, Zhenjun); Cui, X (Cui, Xu); Liu, DJ (Liu, Dajun); Duan, Q (Duan, Qian)

来源出版物: DYES AND PIGMENTS 卷: 194 文献号: 109632 DOI: 10.1016/j.dyepig.2021.109632 出版年: OCT 2021

Web of Science 核心合集中的 "被引频次": 0

被引频次合计: 0

摘要: In this report, a series of novel four-arm star-shaped polymethyl methacrylate with core of phthalocyanine indium polymers (InPc-(PMMA(x))(4)) were achieved with different molecular weights through Activator ReGenerated by Electron Transfer Atom Transfer Radical Polymerization, using the synthesized phthalocyanine indium (InPc-Br) as initiator. The InPc-(PMMA(x))(4) polymers were characterized by NMR, FT-IR, GPC, UV-Vis and PL spectroscopy. The nonlinear optical (NLO) properties of InPc-(PMMA(x))(4) polymers were investigated by the Z-scan technique and it revealed that InPc-(PMMA(16))(4) obtained satisfactory NLO properties with imaginary third order susceptibility ($\text{Im}[\chi^{(3)}]$) of 16.4×10^{-12} esu. Furthermore, reacting polymer InPc-(PMMA(16))(4) with NaN_3 and 1-(4-nitrophenyl)-2-(4-(prop-2-yn-1-yloxy) phenyl) diazene (Azo-yne) through click reaction, a novel InPc polymer InPc-(PMMA(16)-b-Azo)(4) was successfully synthesized. InPc-(PMMA(16)-b-Azo)(4) displayed a weak fluorescence at 707 nm compared to InPc-(PMMA(16))(4), demonstrating the energy transfer (ET) process between Azo and InPc, which could be proved by density functional theory. Because of the ET process, InPc-(PMMA(16)-b-Azo)(4) exhibited a better NLO performance than InPc-(PMMA(16))(4), with $\text{Im}[\chi^{(3)}]$ of 20.7×10^{-12} esu. In addition, the InPc-(PMMA(16)-b-Azo)(4)/PMMA complexes were prepared for the convenience of practical application, and it exhibited an excellent $\text{Im}[\chi^{(3)}]$ value of 30.2×10^{-12} esu and a satisfactory limiting threshold of 0.04 J/cm^2 . The significantly enhanced NLO properties of InPc-(PMMA(16)-b-Azo)(4)/PMMA complexes demonstrate a weaker aggregation effect in polymethyl methacrylate matrix than in methyl methacrylate solution. Our study provides a promising design strategy to synthesize high performance NLO materials for practical applications.

入藏号: WOS:000685513400002

语言: English

文献类型: Article

作者关键词: Phthalocyanine; Azobenzene; Energy transfer; Nonlinear optical materials

KeyWords Plus: WALLED CARBON NANOTUBES; MONO-AZO DYES; LIMITING PROPERTIES; SIDE-CHAIN; ZINC; COPOLYMERS; SUBSTITUTION; DIMERS; FILMS; ATRP

地址: [Wang, Jihua; Dong, Wenyue; Chen, Qiyue; Si, Zhenjun; Cui, Xu; Duan, Qian] Changchun Univ Sci & Technol, Sch Mat Sci & Engn, Changchun 130022, Peoples R China.

[Liu, Dajun] Changchun Univ Sci & Technol, Sch Chem & Environm Engn, Changchun 130022, Peoples R China.

[redacted] Minist Educ, Engn Res Ctr Optoelect Funct Mat, Changchun 130022, Peoples R China.

通讯作者

通讯作者地址: Duan, Q (通讯作者), Changchun Univ Sci & Technol, Sch Mat Sci & Engn, Changchun 130022, Peoples R China.

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Impact Factor (2020): 4.889

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年份	2020
ISSN	0143-7208
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Open Access	否
Web of Science	SCIE

期刊分区

	学科	分区	Top期刊
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	MATERIALS SCIENCE, TEXTILES 材料科学: 纺织	1	
小类	CHEMISTRY, APPLIED 应用化学	2	-
	ENGINEERING, CHEMICAL 工程: 化工	2	
---The End---			

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密
查
中

作
站

该检索报告是学术成果中的第三条

检 索 报 告

一、检索要求

- 1、被检作者: (g, jinua)
- 2、委托单位: 长春理工大学
- 3、检索目的: 文献被收录情况及所在期刊 JCR 影响因子、中科院期刊分区情况

二、检索范围

Science Citation Index Expanded (SCI-E)	1900-present	网络版
Journal Citation Reports (JCR)	2020 年	网络版
中国科学院文献情报中心期刊分区表在线平台(中科院分区)	2021 年	网络版

三、检索结果

委托人提供的1篇论文被SCI-E数据库收录, 其收录情况及论文所在期刊最新年份的JCR影响因子、中科院期刊分区情况见附件一。

特此证明!

东北师范大学科技查新咨询中心
教育部科技查新工作站 (L24)
(盖一章)

检索报告人: 孟双凤

2022 年 2 月 24 日

附件一：SCI-E收录情况

第 1 条, 共 1 条

标题: Synthesis of nonlinear optical performance of phthalocyanine indium polymers with electron-donating group porphyrin by efficient energy transfer

作者: [redacted], Dong, WY (Dong, Wenyue); Si, ZJ (Si, Zhenjun); Cui, X (Cui, Xu); Duan, Q (Duan, Qian)

第一作者

来源出版物: DYES AND PIGMENTS 卷: 198 文献号: 109985 DOI:

10.1016/j.dyepig.2021.109985 出版年: FEB 2022

Web of Science 核心合集中的 "被引频次": 0

被引频次合计: 0

使用次数 (最近 180 天): 2

使用次数 (2013 年至今): 2

摘要: In this study, a phthalocyanine indium (InPcOH) and three porphyrin derivatives (Por2a, Por2b, Por2c) were successfully synthesized. Three kinds of novel four-arm star-shaped poly(propylene oxide) (PPO) with core of InPcOH and chain-end of porphyrin derivatives, named InPc-(PPOx-Por2n)(4) (n = a-c), were achieved through the InPcOH as initiator by ring-opening polymerization. From fluorescence spectra, InPc-(PPOx-Por2n)(4) polymers revealed weaker emission intensity at 704 nm in comparison with InPc-(PPO29)(4), proving energy transfer (ET) pathway from Por2a-2c to InPc, which could be established by theoretical study. Due to ET pathway, InPc-(PPOx-Por2n)(4) polymers showed stronger nonlinear optical (NLO) performance than InPc-(PPO29)(4) polymer. Among InPc-(PPOx-Por2n)(4), InPc-(PPO33-Por2b)(4) obtained the most outstanding NLO performance exhibiting imaginary third-order susceptibility ($\text{Im}[\chi^{(3)}]$) of 6.25×10^{-11} esu, which could ascribe the efficient ET pathway from Por2b to InPc based on the appropriate spatial structure and small energy gap of Por2b. Moreover, the InPc-(PPO33-Por2b)(4)/polymethyl methacrylate (PMMA) composites were prepared for applying actually, and it displayed a prominent $\text{Im}[\chi^{(3)}]$ value of 22.4×10^{-11} esu and an outstanding limiting threshold of 0.14 J/cm^2 . The remarkably enhanced NLO performance exhibited by InPc-(PPO33-Por2b)(4)/PMMA composites in comparison with that in methyl methacrylate solution prove a feeble aggregation effect in PMMA matrix, which indicate the great potential of our polymers for real application in NLO field. This research could furnish a novel designing approach in terms of NLO materials that exhibit great performance.

入藏号: WOS:000744047600003

语言: English

文献类型: Article

作者关键词: Phthalocyanine; Porphyrin; Energy transfer; Nonlinear optical material

KeyWords Plus: ZINC PORPHYRIN; 2-PHOTON ABSORPTION; RAMAN-SPECTROSCOPY; CENTRAL METALS; HETEROTRIMER; SPECTRA; FILMS; LIGHT

地址: [Wang, Jihua; Dong, Wenyue; Si, Zhenjun; Cui, Xu; Duan, Qian] Changchun Univ Sci & Technol, Sch Mat Sci & Engrn, Changchun 130022, Peoples R China.

[redacted] Minist Educ, Engrn Res Ctr Optoelect Funct Mat, Changchun 130022, Peoples R China.

通讯作者

通讯作者地址: Cui, X; Duan, Q (通讯作者); Changchun Univ Sci & Technol, Sch Mat Sci & Engrn, Changchun 130022, Peoples R China.

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署名单位

Affiliations: Changchun University of Science & Technology

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首页

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反馈

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DYES AND PIGMENTS

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大类	学科	分区	Top期刊
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	ENGINEERING, CHEMICAL 工程: 化工	2	

The End

该检索报告是学术成果中的第四条

中华人民共和国教育部科技查新工作站 (Z04)

附件:

El-compindex 收录情况:

1. Synthesis and Characterization of Phthalocyanine

Accession number: 20204809524628

Authors: (1); Duan, Qian (1)

Author affiliation: (1) School of Materials Science and Engineering, Changchun University of Science and Technology, Changchun, China

Corresponding author: mduanqian88@hotmail.com

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Abbreviated source title: J. Phys. Conf. Ser.

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Abstract: In the present study, linear poly(methyl methacrylate161-co-phthalonitrile1.5) (P(MMA161-co-CPMA1.5)) polymer was prepared by reversible addition-fragmentation chain transfer (RAFT) polymerization. Then the P(MMA161-co-CPMA1.5) polymer followed by macrocyclization reaction to form poly(methyl methacrylate167-co-zinc phthalocyanine1.1) (P(MMA167-co-ZnPc1.1)) polymer. The P(MMA167-co-ZnPc1.1) polymer was characterized by fourier transform infrared, nuclear magnetic resonance, ultraviolet-visible absorption. The nonlinear optical properties of the P(MMA167-co-ZnPc1.1) polymer were investigated by using the Z-scan technique at 532 nm with 7 ns laser pulses. The results revealed that the P(MMA167-co-ZnPc1.1) polymer exhibited excellent reverse saturable absorption (RSA) performance. © Published under licence by IOP Publishing Ltd.

Number of references: 12

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