

## 第五卷 1985年

### 总 目 录

#### 第 一 期

中国的光学近况 .....	王大珩等	(1)
放电泵浦 $Xo_2Cl^*$ 的形成和猝灭动力学 .....	楼祺洪	(11)
用于切除和气化人体肝癌的大功率光纤光缆 .....	叶碧青等	(15)
一种直接测定高功率激光系统“B积分”的方法 .....	余文炎等	(19)
平面薄膜靶激光等离子体消融参量的测量 .....	林尊琪等	(24)
激光等离子体实验中测量离子和 X 射线的能量计 .....	林康春等	(32)
用非相干光进行图像微分 .....	羊国光等	(38)
反应离子束微细加工全息闪耀光栅研究 .....	傅新定等	(43)
ZnS/Na <sub>3</sub> AlF <sub>6</sub> 干涉滤光片的电场辅助淀积 .....	顾培夫	(50)
研究玻璃表面层参数的一种新方法——平板双面偏振光反射光强比的测量 .....	梁培辉等	(55)
积分球理论的级数收敛法 .....	李 芳等	(61)
金属光导管传输亚毫米波辐射的研究 .....	傅恩生	(69)
电脉冲宽度连续可调的 GaAs 光电子开关 .....	朱鑫铭等	(75)

#### 研究简讯及其它

铈酸钡晶体 75°C 附近反常性能的倍频研究 .....	朱劲松等	(78)
$O(^3P) + C_2F_4$ 反应生成的 $CF_2(^3B_1)$ .....	周士康等	(83)
大面积激光化学沉积的 $WO_3$ 膜层的特性 .....	沈光平等	(89)
氮分子第一正带系振子强度的理论计算 .....	田兴时	(92)
在自旋极化 $X_a$ 交换近似下类氮离子振子强度的过渡态计算 .....	朱顺人等	(95)
学识渊博、诲人不倦的沈寿春教授 .....	林文光	(31)

#### 第 二 期

偏振条纹扫描干涉仪 .....	伍树东	(97)
全息剪切干涉法测量光场相干性 .....	谢建平	(103)
用白光光学处理技术实现语音的频谱分析 .....	杨震寰等	(107)
用定向散斑屏编码的白光图像处理 .....	母国光等	(113)
用交叉 Ronchi 光栅作图像的微分 .....	叶权书等	(118)
单轴晶体锥面状非共线倍频辐射的研究 .....	谷忠民等	(121)
光学双稳性的 Ikeda 不稳定性与静态稳定度 .....	陈历学等	(128)
横流电激励 $CO_2$ 激光器的二维饱和增益和输出功率 .....	陈丽吟等	(135)
高转换效率下具有高斯及类高斯光束的内腔倍频 .....	姚建铨等	(142)
表面电磁振荡激元波在光学薄膜研究中的应用(I) .....	唐晋发等	(151)
光学薄膜非均匀性的实时椭圆偏振测量 .....	吴启宏	(157)
磷酸盐玻璃中 Cu 离子的发光 .....	刘慧民等	(163)
多模梯度石英光纤拉丝、涂复技术及对光、力学性能的影响 .....	王建国等	(170)

#### 研究简讯及其它

电子束沉积能的时间/空间分布的计算 .....	江汝清	(176)
磷酸盐玻璃中 $Ce^{3+}$ 、 $Tb^{3+}$ 、 $Tm^{3+}$ 的荧光光谱 .....	祁长鸿等	(182)
固态色散介质中的共心 CARS 和 CSRS .....	周福新等	(187)
部分相干光处理系统在散斑干涉术全场分析中的应用 .....	傅子平等	(190)

著名的光谱物理学家高兆兰教授 .....	余振新	(127)
第十六届国际高速摄影及光子学学术会议 .....	查冠华	(112)
第二届全国基础光学学术报告会和基础光学专业委员会工作会议在镜泊湖举行 .....	乙 民等	(117)
1984 自由电子激光会议及其应用讲习班会议 .....	方洪烈	(169)

## 第 三 期

在真空紫外区离子的光电离截面的测定 .....	E. Jannitti <i>et al.</i>	(193)
准分子激光器放大自发辐射特性的研究 .....	张大可等	(199)
$H_2$ 对 $CO_2$ 序列带激光的影响 .....	李 乐等	(205)
六路亚毫微秒铍玻璃激光系统研究进展 .....	谢梓铭等	(211)
偏硼酸钡晶体倍频系数和紫外吸收边的计算 .....	祝健康等	(217)
人造非线性介质的简并的四波混频 .....	吴存恺等	(225)
Möllenstedt 静电双棱镜的工作特性 .....	陈建文	(229)
等待型高速相机光学系统的研究 .....	陆增培	(235)
散斑错位照相术的空间频率成分 .....	何毓宁	(241)
用激光散斑相关方法实时测量表面粗糙度 .....	郑月明等	(248)
光栅光谱仪的偏振响应及喇曼散射偏振谱的测量 .....	姚振益等	(252)
染料锁模激光器用于精密光学测量技术的研究 .....	王清月	(257)

## 研究简讯及其它

$TlCl_4-PbCl_2-NaCl$ 系统红外玻璃 .....	戴义生等	(262)
计算原子跃迁几率的库仑近似的 BASIC 程序及其应用 .....	张挺健等	(266)
双模激光的非共振运转 .....	李孝中等	(271)
铜/溴化铜、铅激光光脉冲的形状和瞬时发散度 .....	汪永江等	(275)
用于全息存贮的全息散斑相移透镜 .....	傅子平等	(281)
CO 选支激光的偏振度和振动方向的测定 .....	程瑞华等	(285)
我国红外技术的带头人——汤定元教授 .....	俞福堂	(247)
中国光学学会第一、二届理事会联席会议在北京召开 .....	乙 民	(288)

## 第 四 期

为进一步办好《光学学报》而努力 .....	王之江	(289)
对撞脉冲锁模环染料激光器的运转特性 .....	林礼煌等	(291)
从氧到硅高阶电离离子 K 系 X 射线光谱的辨认 .....	卢仁祥等	(299)
具有导向磁场的线偏振 Wiggler 自由电子激光器 .....	陈建文等	(304)
钨-硅共溅薄膜中形成硅化钨的喇曼光谱 .....	孙逸麓等	(310)
银微粒——透明介质组成的非均匀介质的光学和光谱特性的等效洛伦兹振子理论描述 .....	张春平等	(313)
掺钛氟磷玻璃的时间分辨荧光光谱 .....	刘慧民等	(319)
镧磷酸盐玻璃中 $Eu^{3+}$ 离子的激光选位光谱研究 .....	陈述春等	(325)
光学系统中的光栅衍射自成像现象: 广义的 Talbot 效应 .....	廖江红等	(331)
波谱合成脉冲电光调制 .....	李世忱等	(336)
代数法确定无吸收光学薄膜的参数 .....	战元龄等	(343)
磁浸没场发射电子探针系统探讨 .....	姚骏思等	(348)

## 研究简讯及其它

强 X 射线通过铝箔时透射异常 .....	卢仁祥等	(356)
新型大孔径变焦距物镜 .....	尤英奇	(362)
条纹分析中一种简单的 Zernike 多项式拟合方法 .....	刘月爱	(368)
横向旋转剪切干涉的某些讨论及其与横向平行剪切干涉的关系 .....	徐德衍	(374)
产生激光脉冲序列的放电现象 .....	邱明新等	(379)

- 著名的光学、光谱学教育家——郑一善教授.....王祖康等 (378)  
第六届全国红外科学技术交流会在洛阳市举行.....俞福堂 (342)

## 第五期

- 反向脉冲传递法——扩展白光干涉现象研究(I)扩展白光成像干涉仪.....刘立人 (385)  
便于计算离焦光学系统的 OTF 的较精确算式.....何志华等 (392)  
强近共振激光驱动下二能级系统中激光脉冲的相干传播.....黄倪宏等 (400)  
相干光脉冲的合并和面积演化.....顾敏等 (409)  
双轴晶体有效非线性系数的计算问题.....王基明等 (416)  
三光束干涉仪理论.....吴震 (421)  
光外差法正弦尺干涉测角计.....叶益祥 (428)  
电子波经 Møllénstedt 双棱镜的传输.....傅淑芬 (435)  
费米折射率分布的平面光波导的模式.....杨指南等 (440)

## 研究简讯及其它

- 相位直边像反映的光学系统某些特性.....杨健等 (446)  
沟道波导模截止调制器中的光损伤.....陈铮 (452)  
空间分辨的光电流效应.....王裕民等 (455)  
光学透明薄膜折射率色散的测量.....周九林 (461)  
具有受激布里渊共振的激光系统.....徐捷等 (466)  
彩虹全息的反射显示.....单启垫等 (470)  
用光学功率谱识别癌细胞工作中的特征选择.....张少颖等 (475)  
第七届全国激光学术报告会在成都市进行.....黎凤 (391)  
第二届全国固体光学性质会议和第二届全国红外物理学术讨论会在厦门市联合举行.....俞福堂 (399)

## 第六期

- 反向脉冲传递法——扩展白光干涉现象研究 II. Lau 效应和光栅成像.....刘立人 (481)  
平条纹面介质光栅衍射之二阶耦合波理论的进一步推广.....恽钢等 (488)  
激光等离子体的回旋辐射.....谭维翰 (496)  
利用多光束偏转原子束验证共振荧光中光子统计规律的建议.....王育竹 (505)  
关于混合气体放电中光电流光谱分析.....王裕民等 (512)  
计算机全息在  $\phi 1.56$  米双曲面主镜加工检验中的应用.....施志果等 (519)  
双稳态半导体激光器的理论分析.....杜宝勋 (528)  
 $1.32 \mu\text{m}$  泵浦下多模光纤受激喇曼散射.....吕建华等 (533)  
碘分子在 He-Ne 激光器输出谱线范围内的振转带.....赵克功等 (537)  
快速测量 RF 激光器光腔介质的转动温度分布.....黄瑞平等 (543)  
偏硼酸钡晶体晶格振动的群论分析与喇曼光谱.....张光宾等 (548)

## 研究简讯及其它

- 用衰减全反射法研究极薄介质层的光学性质.....杨心亮等 (557)  
可饱和吸收染料中一种新型两波相互作用.....胡企铨等 (562)  
频率失谐对相干光脉冲合并和面积演化的影响.....顾敏等 (565)  
ADTF 通用多功能光学设计程序.....王永仲 (570)  
征稿简则..... (576)  
启事两则..... (487)

## 第七期

- 轴向梯度折射率光学元件的设计.....林中天等 (577)  
单模钕玻璃激光振荡器.....张贵芬 (585)  
 $1.47 \sim 4 \mu\text{m}$  光参量振荡器.....潘忠汉等 (590)

计算机源生的全息光学元件(OOHOE)的合成及优化设计.....	陆达等	(594)
大景深全息图的拍摄.....	葛万福等	(600)
用同步辐射测量镜子在真空紫外和软 X 线区的反射和散射.....	陈星旦	(605)
微小光程差的光拍相位检测.....	徐炳德	(609)
高效率 KDP 倍频晶体的精选.....	蔡希洁等	(614)
椭圆测量中反射率对于膜厚变化的灵敏度因子.....	王志刚	(619)
红外减反射膜热处理条件和机理研究.....	李志奇	(625)

## 研究简讯及其它

高重复率短脉冲氙灯时间分辨光谱的测量.....	林文正等	(631)
海洋辐射传递两流理论的海中悬浮泥沙光学模式.....	刘智深	(636)
激光等离子体诊断用的光探针.....	孟绍贤等	(640)
XeCl* 准分子激光器被动锁模.....	成序三等	(643)
测定光纤标量模传输系数 $\beta_{mn}$ 的方法.....	孙宗建	(648)
一种新型喇曼增益介质的受激喇曼散射.....	王兆民	(654)
基于喇曼-奈斯声光衍射的光学双稳装置.....	梁桂云等	(658)
磁光材料磁圆二色性的测量.....	刘公强等	(663)
光学材料的激光感生破坏与脉冲宽度关系的研究.....	张梅珍等	(667)
致力于我国光学教育事业的著名科学家——洪晶教授.....	李淳飞	(589)
征稿简则.....		(671)

## 第 八 期

采用空心阴极放电灯的激光感生荧光技术测量氖和铜原子高激发态寿命.....	殷立峰等	(673)
HCD 中氩离子的光电流效应.....	李世芳等	(679)
求解原子光谱线同位素位移的数学描述.....	宋耀祖等	(685)
钠原子的饱和和三步共振光离子化.....	厚美英等	(691)
超短脉冲和腔内色散.....	王之江等	(697)
“新月”形隐埋波导耦合集成型激光器的动态特性分析.....	王德宁等	(702)
激光高斯光束的两维整形.....	张小浩等	(709)
利用复眼柱面透镜的非接触光刻系统.....	郝沛明	(717)
激光散斑反差与表面粗糙度关系的理论分析.....	毛文懿等	(724)
喇曼分光仪中杂散光的测试.....	朱涵如	(730)

## 研究简讯

双光子过程光子统计.....	何林生	(735)
一种错位连续可调的散斑照相法.....	姚刚	(744)
漂白银盐干板形成位相编码片的特性分析.....	康辉	(749)
掺杂染料向列液晶筒并四波混频各向异性的机制.....	初桂荫	(754)
自由电子激光器中电子轨道的稳定性分析.....	王元殿	(757)
位相光栅整形激光束剖面.....	梁向春等	(761)
CaOH 自由基 $A-X(100)-(000)$ 跃迁的激光激发荧光光谱研究及其转动温度测量.....	朱清时等	(765)

## 第 九 期

三能级系统同位素相干选择激发.....	匡一中	(769)
用激发感生荧光技术研究 $Ne1s_2-2p$ 反常光电流信号的机理.....	胡企铨等	(779)
$Nd_{x}Y_{1-x}PO_4$ 晶体中激发能量的传递和离子-离子相互作用.....	陈述春	(785)
对撞脉冲锁模 Nd:YAG 激光器的研究.....	林星等	(794)
$K_2H(IO_3)_2Cl$ 单晶的喇曼光谱研究.....	杨华光等	(799)
压缩算符的新形式与压缩态的各种表示和性质.....	范洪义等	(804)
镶嵌面阵传象特征的基本理论模型.....	张保民	(812)

- 椭圆芯单模阶跃光纤中孤立波偏振特性分析.....周国生 (819)  
 计算干涉图补偿法检验非球面.....姜子龙等 (825)  
 掺  $\text{Er}^{3+}$  离子玻璃作为室温激光工作物质的分析.....郑海兴等 (833)

## 研究简讯及其它

- 低压氛瞬态射频光电流效应.....朱祝彪等 (841)  
 固体表面单个光电子的检测.....张在宝等 (846)  
 砷化镓晶体在连续  $\text{CO}_2$  激光作用下的三阶非线性系数.....李再光等 (850)  
 多程喇曼增益室及其腔镜反射率的测定.....蔡邦维等 (855)  
 非均匀媒质的变换矩阵和流图结构.....马建等 (859)  
 第四届全国激光基本问题讨论会在江苏省吴县召开.....乙民 (778)

## 第十期

- 1.3 焦耳  $\text{XeCl}$  激光器的注入锁定.....成序三等 (865)  
 具有侧反射面的光学谐振腔.....方洪烈 (870)  
 单镜  $\text{Cu}/\text{CuBr}$  激光器放大自发辐射光脉冲的弛豫振荡.....汪永江等 (876)  
 $\text{XeCl}$  准分子激光器寿命的研究.....胡雪金等 (881)  
 像散彩虹全息中的 L-S-L 系统深景三维像技术.....刘淑辉等 (886)  
 血卟啉 (HP) 在溶液中产生单态氧  $^1\text{O}_2$  的  $a^1\Delta_g(v=1) \rightarrow X^3\Sigma_g^-(v=0)$  跃迁发射光谱.....赵永净等 (891)  
 单模光纤耦合器带宽特性分析.....姚慧海等 (897)  
 用解卷积方法测量亚毫秒荧光寿命.....陈文驹等 (904)  
 菲涅耳波带板干涉仪及其在激光束波面检测中的应用.....顾天衢等 (910)  
 $\phi 2.16$  米非球面主镜的二维哈特曼检验.....高必烈等 (916)  
 光通过  $\text{LiKSO}_4$  单晶产生的衍射现象.....杨华光 (926)  
 硫系玻璃红外光纤芯料的研究.....毛锡贵等 (932)  
 非球面反射镜面的弹性变形加工.....王建国等 (937)

## 研究简讯

- 光栅编码位相型图像的假彩色化.....张静江等 (944)  
 单模光纤拍长度的扭转测量法.....黄肇明等 (951)  
 2 焦耳脉冲雪崩放电  $\text{XeCl}$  激光器.....楼祺洪等 (955)  
 用非银盐记录介质实现黑白图像假彩色化.....黄婉云等 (958)

## 第十一期

- 表面等离子激元波的光学二次谐波效应及应用——I. 长程等离子激元波的二次谐波效应.....陈湛等 (961)  
 表面等离子激元波的光学二次谐波效应及应用——II. 表面吸附分子的非线性效应的研究.....陈湛等 (969)  
 大口径 KDP 晶体高效率倍频.....蔡希浩等 (975)  
 染料非线性标准具的光学逻辑功能.....张雷等 (980)  
 正支共焦非稳腔输出功率方程及其数值计算方法.....程祖海等 (986)  
 共焦型激光谐振脚.....金德运 (992)  
 变折射率光线方程的一种数值解法.....卢文全 (997)  
 对称金属包覆介质波导中的表面模.....杨傅子等 (1002)  
 光和 Dressed 原子的相互作用.....林福成等 (1009)  
 正交光栅散斑剪切干涉术.....朱益清等 (1118)  
 关于波带片的透光性对聚焦面光强分布的影响的分析.....程维明等 (1126)  
 球面波导短程透镜的球差.....许承杰等 (1131)

## 研究简讯

- 表面增强喇曼散射 (SERS) 光谱中影响增强效应因素的实验研究.....凌德洪等 (1135)  
 喇曼散射研究  $\text{LiKSO}_4$  的低温相变.....顾本源等 (1140)

LiNbO <sub>3</sub> 等晶体的红外反射光谱的数据分析 .....	刘 燕等	(1146)
--	------	--------

## 第 十 二 期

同步泵浦染料激光脉冲形状非对称性的理论分析 .....	鲍晓毅等	(1057)
钡原子高激发态双光子光谱 .....	吴东宏等	(1064)
高压氢中的级联泵浦受激喇曼散射 .....	楼拱洪等	(1069)
不同声场状态下的声光光学双稳态 .....	董孝义等	(1074)
采用空间滤波产生等高线 .....	李荫泉等	(1082)
采用柱面光栅的照射型莫尔轮廓法 .....	袁玉麟等	(1090)
自持放电横流 CO <sub>2</sub> 激光器中影响效率的一些因素 .....	徐纪华等	(1097)
铅蒸气激光器计算机模拟 .....	夏铁君等	(1104)
辉光放电无定形硅氢薄膜光隙计算的一个简化分析法 .....	朱维嘉	(1110)
波分复用中的自聚焦透镜耦合系统 .....	刘德明等	(1118)

## 研究简讯及其它

铜蒸气激光器中的四波混频 .....	林福成等	(1127)
用光谱分辨的二次谐波方法测定连续波同步泵浦染料激光脉冲形状的非对称性 .....	鲍晓毅等	(1130)
由场分布求单模光纤的波导色散 .....	王子平等	(1134)
中国光学学会在上海召开一九八五年年会 .....	伊 敏等	(封三)
全国首届有机和生物发光学术会议在长春举行 .....	沈士瑞	(1129)
《光学学报》1985 年卷总目录和作者索引 .....		( i )

## ACTA OPTICA SINICA, Vol. 5, 1985

## CONTENTS

## No. 1

Present situation of optics in China .....	Wang Daheng et al.	( 1 )
Formation and quenching kinetics of discharge pumped Xe <sub>2</sub> Cl* .....	Lou Qihong	( 11 )
High power laser beam transmitted through a fiber optic cable for treatment of human hepatic cancer .....	Ye Biqing et al.	( 15 )
A method of directly measuring B-integral in a high power laser system .....	Yu Wenyan et al.	( 19 )
Ablation parameter measurement of plain foil target in laser produced plasmas .....	Lin Zunqi et al.	( 24 )
Calorimeters for measurement of ions and X-rays in laser-plasma experiments .....	Lin Kangchun et al.	( 32 )
Image differentiation with spatial incoherent light .....	Yang Guoqiang et al.	( 38 )
Microfabrication of holographic blazed grating by reactive ion beam etching .....	Fu Xinding et al.	( 43 )
Electric field assisted deposition of ZnS/cryolite filters .....	Gu Peifu	( 50 )
A new approach to investigate the parameters of surface layer on glasses .....	Liang Peihui et al.	( 55 )
Theory of integrating sphere by converging series approaches .....	Li Fang et al.	( 61 )
Transmission of submillimeter waves in a metal light pipe .....	Fu Ensheng	( 69 )
GaAs optoelectronic switch with continuous variable electric pulse width .....	Zhu Xinming et al.	( 75 )
<b>Research Notes</b>		
SHG study for anomalous properties of LiNbO <sub>3</sub> crystal near 75°C .....	Zhu Jinsong et al.	( 78 )
CF <sub>2</sub> ( <sup>3</sup> B <sub>1</sub> ) produced by reaction O( <sup>3</sup> P) + C <sub>2</sub> F <sub>4</sub> .....	Zhou Shikang et al.	( 83 )
Characteristics of WO <sub>3</sub> film with large area deposited by laser photolysis .....	Shen Guangping et al.	( 89 )
Theoretic calculation of the oscillator strength of the first positive band system of the nitrogen molecule .....	Tian Xingshi	( 92 )
Transition state calculations of oscillator strengths of helium-like ions in spin polarization X <sub>α</sub> exchange approximation .....	Zhu Qiren et al.	( 95 )
Professor Shen Shouchun, a tireless in teaching and erudite scholar .....	Lin Wenguang	( 31 )

## No. 2

- Polarization fringe scanning interferometer.....*Wu Shudong* (97)
- Measurement of optical coherence with holographic shearing interferometer.....*Xie Jianping et al.* (103)
- Speech spectrum analysis with a white-light optical processing technique.....*F. T. S. Yu et al.* (107)
- White-light image processing using orientated speckle screen encoding.....*Mu Guoguang et al.* (113)
- The image differentiation by Crossed-Ronchi-Grating.....*Ye Quanshu et al.* (118)
- Research on noncollinear second-harmonic-generation cones in uniaxial crystals.....*Gu Zhongmin et al.* (121)
- Ikeda instability and degree of stability in optical bistability.....*Chen Lixue et al.* (128)
- The two-dimensional saturated gain distribution and the output power in a transverse flow discharge CO<sub>2</sub> Laser.....*Chen Liyin et al.* (135)
- Intracavity frequency doubling with Gaussian and Gaussian-like beam at high conversion efficiency .....*Yao Jianquan et al.* (142)
- Application film of surface plasma waves to the studies of optical thin (I).....*Tang Jinfa et al.* (151)
- In-situ measurement of inhomogeneity for optical thin films by ellipsometry.....*Wu Qihong* (157)
- Luminescence of Cu<sup>+</sup> ions in phosphate glass.....*Liu Huimin et al.* (163)
- Drawing and coating techniques of multi-mode grade silica optical fiber.....*Wang Jianguo et al.* (170)

## Research Notes

- Monte Carlo calculation of time/space distribution of energy deposition in electron-beam-pumped laser .....*Wang Bqing* (176)
- Fluorescence spectra Tb<sup>3+</sup>, Tm<sup>3+</sup> in phosphate glasses.....*Qi Changkong et al.* (182)
- Concentric CARS and CSRS in solid-state dispersive medium.....*Zhou Fuxin et al.* (187)
- Analysing whole-field filtering of specklegram in a partially coherent and optical processing system .....*Fu Ziping et al.* (190)
- Professor Gao Zhaolan, outstanding Chinese Spectro-Physicist.....*Yu Zhenxin* (127)
- XVI International Conference on High Speed Photography and Photonics at Strasbourg, France, on 27 August 1984.....*Cha Guanhua* (112)
- The Second National Symposium on the Fundamental Optics and the working meeting of its Speciality Committee held in Jingpohu Lake.....*Yi Min et al.* (117)
- 1984 Free Electron Laser Conference and Workshop on Applications of FEL, Castelgandolfo (Rome) Italy .....*Fang Hongkai* (169)

## No. 3

- Measurement of photoionization cross section of ions in the vacuum ultraviolet.....*E. Jannitti et al.* (193)
- Study on ASE characteristics of excimer laser.....*Zhang Dake et al.* (199)
- Effect of H<sub>2</sub> on sequence band CO<sub>2</sub> laser.....*Li Le et al.* (205)
- Progress in six beam sub-nanosecond Nd-glass laser facility.....*Xie Zhiming et al.* (211)
- Calculations of SHG coefficients and ultraviolet absorption edge of barate crystal.....*Zhu Jikang et al.* (217)
- Degenerate four-wave mixing in an artificial nonlinear medium.....*Wu Cunlai et al.* (225)
- Operation behaviour for Møllenstedt electrostatic biprism.....*Chen Jianwen* (229)
- Study on the optical system of the waiting type high speed camera.....*Lu Zengpei* (235)
- Components of spatial frequencies of speckle shearing photography .....*He Yunong* (241)
- Determination of surface roughness by correlation of laser speckle in real time.....*Zheng Yueming et al.* (248)
- Polarization response of grating spectrometers and measurement of Raman polarization spectrum .....*Yao Zhenyi et al.* (252)
- Mode-locked dye laser for study of accurate optical measurement technique.....*Wang Qingyue* (257)

## Research Notes

- ThCl<sub>4</sub>-PbCl<sub>2</sub>-NaCl system infrared glass.....*Dai Yisheng et al.* (262)
- BASIC program of Coulomb approximation for the calculation of atomic transition probability and its application .....*Zhang Tingjian et al.* (266)
- Nonresonant two-mode laser action.....*Li Xiaoshen et al.* (271)
- The profiles and transient divergences of Cu/CuBr and Pb lasers.....*Wang Yongjiang et al.* (275)
- Speckle phase-shift holographic lens for information storage.....*Fu Ziping et al.* (281)

Determination of polarization degree and vibration direction in a branch-selected CO laser.....	<i>Cheng Ruihua et al.</i>	(285)
The pioneer of Chinese infrared technique—Professor Tang Dingyuan.....	<i>Yu Futang</i>	(247)
First and Second Council Joint Meeting of the Optical Society of China held in Beijing.....	<i>Yi Ming</i>	(288)

## No. 4

Strive to do «Acta Optica Sinica» better.....	<i>Wang Zhijiang</i>	(289)
Operating Characteristics of a Colliding Pulse Mode-Locked Ring Dye Laser.....	<i>Lin Lihuang et al.</i>	(291)
Identification of the K-series of laser-produced X-ray spectra from oxygen to silicon.....	<i>Lu Renxiang et al.</i>	(299)
A free electron laser with linearly polarized wiggler and axial magnetic field.....	<i>Chen Jianwen et al.</i>	(304)
Raman spectroscopy of the silicide WSi <sub>2</sub> formed by co-sputtered WSi <sub>2</sub> .....	<i>Sun Diechi et al.</i>	(310)
The description of optical and spectral properties of inhomogenous media consisted of ultrafine silver particles-transparent media with aid of the theory of effective Lorentz oscillator.....	<i>Zhang Chunping et al.</i>	(313)
Time-resolved fluorescence spectra of titanium-contained fluorophosphate glass.....	<i>Liu Huimin et al.</i>	(319)
Studies of laser-excited site-selective spectra for Eu <sup>3+</sup> ions in La-phosphate glass.....	<i>Chen Shuchun et al.</i>	(325)
Diffraction self-imaging phenomenon of the grating in the optical system: general Talbot effect.....	<i>Liao Jianghong et al.</i>	(331)
The electro-optical modulation by harmonic-synthesized pulse.....	<i>Li Shichen et al.</i>	(336)
Determination of absorption-free optical thin film parameters by algebraic method.....	<i>Zhan Yuanling et al.</i>	(343)
Magnetic field superimposed field emission electron gun system.....	<i>Yao Jun'en et al.</i>	(348)

## Research Notes

Transmission anomalies of aluminium foils irradiated by intense laser-produced X-ray radiation.....	<i>Lu Renxiang et al.</i>	(356)
A new-type zoom lens with large aperture.....	<i>You Yingqi</i>	(362)
A simple method for Zernike polynomial fitting in fringe analysis.....	<i>Liu Yueai</i>	(368)
Discussion on lateral-rotation shearing interference and its relation with lateral parallel shearing interference.....	<i>Xu Deyan</i>	(374)
Generation of laser pulse sequence with discharge.....	<i>Qiu Mingxin et al.</i>	(379)
Famous teacher of optics and spectroscopy in China—Professor Zeng Yishan.....	<i>Wang Zhugeng et al.</i>	(378)
The Sixth National Symposium on Infrared Science and Technology Held in Luoyang.....	<i>Yu Futang</i>	(342)

## No. 5

Study on phenomena of interference with extended white light illumination by backward impulse response.....	<i>Liu Liren</i>	(385)
A convenient formula for computing the OTF of a defocused optical system.....	<i>He Zhikua et al.</i>	(392)
Coherent propagation of optical pulses in a two-level system driven by an intense laser beam.....	<i>Huang Youhong et al.</i>	(400)
Coherent optical pulse combination and pulse area evolution.....	<i>Gu Min et al.</i>	(409)
On the calculation of effective nonlinear optical coefficients of biaxial crystals.....	<i>Wang Gongmin et al.</i>	(416)
Theory of a three-beam interferometer.....	<i>Wu Zhen</i>	(421)
An opto-heterodyne sine-ruler-type angle-measuring interferometer.....	<i>Ye Shengxiang</i>	(428)
Transmission of electron wave through Mollenstedt biprism.....	<i>Fu Shufen</i>	(435)
Modes of a planar waveguide with Fermi index profile.....	<i>Yang Zhinan et al.</i>	(440)

## Research Notes

Characteristics of optical systems with $\pi$ -phase edge image.....	<i>Yang Jian et al.</i>	(446)
Optical damage in channel-waveguide mode cut-off modulators.....	<i>Chen Zhong</i>	(452)
Spatially resolved optogalvanic effect.....	<i>Wang Yumin et al.</i>	(455)
Measurement of refractive-index dispersion of transparent films.....	<i>Zhou Jiulin</i>	(461)



A laser system with a stimulated Brillouin scattering phase conjugating mirror.....	<i>Xu Jie et al.</i>	(466)
Reflection display of rainbow holograms.....	<i>Shan Qiehe et al.</i>	(470)
Feature selection in cancer cell recognition by means of optical power spectra .....	<i>Zhang Shaoying et al.</i>	(475)
The Seventh National Symposium on Laser Science held in Changdu, Shichuan Province.....	<i>Li Feng</i>	(391)
The Second National Symposium on Optical Properties of Solid-State Materials and the Second National Symposium on IR Physics jointly convened in Amoy, Fujian Province.....	<i>Yu Futang</i>	(399)

## No. 6

Study on phenomena of interference with extended white light illumination by backward impulse response II. Lau effect and grating imaging.....	<i>Liu Lixun</i>	(481)
Generalization of the second-order coupled-wave theory of diffractions on planar dielectric gratings .....	<i>Yun Gang et al.</i>	(488)
Cyclotron radiation from laser plasma.....	<i>Tan Weihan</i>	(496)
A proposal concerning the use of multiple-laser-beam-induced deflection of atomic beam to test photon statistics in resonant fluorescence.....	<i>Wang Yushu</i>	(505)
Optogalvanic spectral analysis of discharged gas mixtures.....	<i>Wang Yumin et al.</i>	(512)
Computer generated hologram (CGH) and its application in the testing of $\phi 1560\text{mm}$ hyperboloidal primary mirror.....	<i>Shi Zhiguo et al.</i>	(519)
Theoretical analysis of bistable semiconductor lasers.....	<i>Du Baozun</i>	(523)
Stimulated Raman scattering in multimode optical fibers pumped at $1.32\mu\text{m}$ .....	<i>Lu Jianhua et al.</i>	(533)
Ro-vibrational levels of iodine molecules at He-Ne laser lines.....	<i>Zhao Kegong et al.</i>	(537)
Fast measurement of the rotational temperature distribution in HF laser medium.....	<i>Huang Ruiping et al.</i>	(543)
Group theory analysis of lattice vibrations and Raman spectra of the single crystal of barium metaborate.....	<i>Zhang Guangyin et al.</i>	(548)

## Research Notes

Determination of optical properties of superficial layers with ATR method.....	<i>Yang Xinliang et al.</i>	(557)
New type two-wave interaction in saturable dye.....	<i>Hu Qiquan et al.</i>	(562)
Effects of frequency detuning on coherent optical pulse combination and area evolution.....	<i>Gu Min et al.</i>	(565)
IADTF universal multifunctional optical design program.....	<i>Wang Yonghong</i>	(570)
Information for authors.....		(576)
Notice.....		(487)

## No. 7

Design of optical elements with axial-gradient indices.....	<i>Lin Zhongtian et al.</i>	(577)
A single-mode Nd <sup>3+</sup> : glass laser.....	<i>Zhang Guifen</i>	(585)
An optical parametric oscillator (OPO) tunable in $1.47\sim 4\mu\text{m}$ .....	<i>Pan Zhonghan et al.</i>	(590)
Composition and optimum design of computer originated holographic optical elements (COHOE) .....	<i>Lu Da et al.</i>	(594)
The method for making a hologram of great depth.....	<i>Ge Wanfu et al.</i>	(600)
Measurement of reflection and scattering of mirrors in the VUV and soft X-ray region using synchrotron radiation.....	<i>Chen Xingdan</i>	(605)
Measurement of tiny path difference by phase difference of optical beat.....	<i>Xu Bingde</i>	(609)
Selection of KDP doubling crystals with high conversion efficiencies.....	<i>Cai Xijie et al.</i>	(614)
Sensitivity factor of reflectance to the change of film thickness in ellipsometry.....	<i>Wang Zhigang et al.</i>	(619)
Effects of heat treatment on properties of IR anti-reflection coatings.....	<i>Li Zhongqi</i>	(625)

## Research Notes

Measurement of time-resolved spectroscopy of high-repetition-rate short-pulse xenon flashlamps .....	<i>Lin Wenzheng et al.</i>	(631)
An optical model of suspended sand in the sea based on two-flow theory of radiative transfer in the sea .....	<i>Liu Zhishen</i>	(636)
Probe beam used for diagnostic of laser-produced plasmas.....	<i>Meng Shaonian</i>	(640)
Passive mode-locking of a XeCl* excimer laser.....	<i>Cheng Nusan et al.</i>	(643)
Determination of propagation coefficient for scalar modes in optical fiber.....	<i>Sun Zongjian</i>	(648)

Stimulated Raman scattering of a new Raman gain medium—N <sub>2</sub> -in silica fiber.....	<i>Wang Zhaomin</i>	(654)
An optical bistable device based on-Raman-Nath acousto-optic diffraction .....	<i>Liang Guiyun et al.</i>	(658)
Measurement of magnetic circular dichroism of magneto-optical materials.....	<i>Liu Gongqiang et al.</i>	(663)
Study of pulse duration dependence of laser-induced damages in optical materials.....	<i>Zhang Meizhen et al.</i>	(667)
A famous scientist devoting herself to the optics education—Prof. Hong Jin.....	<i>Li Chunfei</i>	(589)
Information for authors .....		(671)

## No. 8

Lifetime measurement of high excited states of atoms using laser-induced fluorescence technique .....	<i>Yin Lifeng et al.</i>	(673)
Optogalvanic effect of ArII in HCD.....	<i>Li Shifang et al.</i>	(679)
Evaluation of isotope shifts in atomic spectral profiles from profiles of Fabry-Perot interferograms .....	<i>Song Yaoru et al.</i>	(685)
Saturated three-photon ionization of Na atoms.....	<i>Ho Meiying et al.</i>	(691)
Ultrashort pulses and intracavity dispersion.....	<i>Wang Zhijiang et al.</i>	(697)
Analysis of dynamic characteristics of 'crescent' GaAs/(GaAl)As lasers integrated with buried passive waveguide.....	<i>Wang Dewing et al.</i>	(702)
Two-dimensional intensity modification of a Gaussian laser beam by acousto-optic effect.....	<i>Zhang Xiaojie et al.</i>	(709)
A non-contact photolithographic system with fly's eye cylindrical lens.....	<i>Hao Peiming</i>	(717)
Theoretical analysis of the relationship between contrast of laser speckle pattern and surface roughness .....	<i>Mao Wenyi et al.</i>	(724)
Measurement of stray light in Raman spectrometers.....	<i>Zhu Hanru</i>	(730)

## Research Notes

Photon statistics for two-photon processes.....	<i>He Linsheng</i>	(735)
A method of speckle interferometry with continually adjustable shearing amount.....	<i>Yao Gang</i>	(744)
Characteristics of phase encoding plates formed by bleaching silver-halide films.....	<i>Kang Hui</i>	(749)
Mechanism of the anisotropic property of DFWM in dye-dissolving nematic liquid crystal .....	<i>Chu Guiyin et al.</i>	(754)
Stability analysis of electron trajectories in free-electron lasers with an axial magnetic field .....	<i>Wang Yuandian</i>	(757)
Shaping of laser beam profiles with a phase grating.....	<i>Liang Xianchun et al.</i>	(761)
Laser excitation fluorescence spectroscopy of A-X(100)-(000) transitions of CaOH radicals and measurement of their rotational temperature.....	<i>Zhu Qingshi et al.</i>	(765)

## No. 9

Isotope coherent selective excitation in three-level systems.....	<i>Kuang Yishong</i>	(769)
Study on the mechanism of Ne1s <sub>2</sub> -2p anomalous POGS in HCD using LIF technique.....	<i>Hu Qiquan et al.</i>	(779)
Excitation energy transfer and ion-ion interaction in Nd <sub>x</sub> Y <sub>1-x</sub> PO <sub>4</sub> crystals .....	<i>Che Shuchun</i>	(785)
Investigation of a colliding pulse mode-locked Nd:YAG laser.....	<i>Lin Xing et al.</i>	(794)
Raman spectra of K <sub>2</sub> H(IO <sub>3</sub> ) <sub>2</sub> Cl crystals.....	<i>Yang Huaquang et al.</i>	(799)
A new formalism of the squeeze operator and various representations and properties of the squeezed state .....	<i>Fan Hongyi et al.</i>	(804)
A basic theoretical model for image transfer characteristics of mosaic area arrays.....	<i>Zhang Baomin</i>	(812)
Polarization properties of soliton in an elliptical-core single-mode step-index fiber.....	<i>Zhou Guosheng</i>	(819)
A compensating method for testing aspherics with computer-generated interferograms.....	<i>Jiang Zilong et al.</i>	(825)
Investigation of glasses doped with Er <sup>3+</sup> ions used as laser materials.....	<i>Zheng Haixing et al.</i>	(833)

## Research Notes

Transient rf optogalvanic effect of Ne at low pressure.....	<i>Zhu Zhubiao et al.</i>	(841)
---	---------------------------	-------

- Detection of single photoelectron on solid surface.....Zhang Zaizuan *et al.* (846)  
 The third-order nonlinear susceptibility of gallium arsenide under irradiation of a CW CO<sub>2</sub> laser  
 .....Li Zaiguang *et al.* (850)  
 Multiple-pass Raman gain cell and reflectivity measurement of resonator mirrors.....Cai Bangwei *et al.* (855)  
 Augmented transfer matrices and flow graph structures for inhomogeneous media.....Ma Jian *et al.* (859)  
 The 4th National Symposium on Some Fundamental Problems of Lasers held in Wuxian .....Yimin (778)

## No. 10

- Injection locking of a XeCl excimer laser with pulse output energy of 1.3 J .....Cheng Xusan *et al.* (865)  
 Resonators with side reflectors.....Fang Honglie (870)  
 Relaxation oscillation of amplified spontaneous radiation pulse emitted from a single-mirror Cu/CuBr  
 laser.....Wang Yongjiang *et al.* (876)  
 Study on the operation lifetime of an excimer laser.....Hu Xuejin *et al.* (881)  
 Deep-science 3-D imaging technique of L-S-L system in astigmatic one-step rainbow holography.....  
 .....Liu Shuhui *et al.* (886)  
 Emission spectra of  $a^1\Delta_g(v=1) \rightarrow X^3\Sigma_g^-(v=0)$  transition of singlet molecular oxygen <sup>1</sup>O<sub>2</sub> produced by  
 Hematoporphrin (HP) in solutions.....Zhao Yongjing *et al.* (891)  
 Analysis of bandwidth characteristics in single-mode fiber couplers.....Yao Huihai *et al.* (897)  
 Measurement of subnanosecond fluorescence lifetimes by deconvolution .....Chen Wenju *et al.* (904)  
 Fresnel zone plate interferometer and its application in laser wavefront measurement.....  
 .....Gu Tianqu *et al.* (910)  
 Two-dimensional Hartmann quantitative test of an aspherical primary mirror ( $\phi 2.16$  m).....  
 .....Gao Bilie *et al.* (916)  
 Light diffraction from LiKSO<sub>4</sub> single crystals.....Yang Huaguang (926)  
 Study on chalcogenide glasses as cores of infrared optical fibers.....Mao Xilai *et al.* (932)  
 Stressed mirror fabrication—a new technology for making off-axis section of a paraboloid.....  
 .....Wang Jianguo *et al.* (937)

## Research Notes

- The pseudocoloring of an encoded phase-picture.....Zhang Jingjiang *et al.* (944)  
 Twist measurement of beat lengths of single-mode fibers.....Huang Zhaoming *et al.* (951)  
 A 2-J pulse avalanche XeCl excimer laser.....Lou Qihong *et al.* (955)  
 Density pseudocolor encoding of black-white images by non-silver recording medium.....  
 .....Huang Wanyun *et al.* (958)

## No. 11

- Optical second-harmonic generation by surface plasmon wave and its application, (I).....  
 .....Chen Zhan *et al.* (961)  
 Optical second-harmonic generation by surface plasmon wave and its application, (II).....  
 .....Chen Zhan *et al.* (969)  
 High-efficiency frequency doubling large-aperture KDP crystals.....Cai Xijie, *et al.* (975)  
 Optical logic in a Dye-filled nonlinear etalon .....Zhang Lei, *et al.* (980)  
 Output power equation and numerical integrating method of positive-branch unstable confocal  
 resonator.....Cheng Zuhai *et al.* (986)  
 A confocal laser resonator.....Jin Deyun (992)  
 A method of numerical solution for ray equation with varying refractive index.....Lu Wenquan (997)  
 Surface modes of symmetric metal clad dielectric waveguides.....Yang Fuzi *et al.* (1002)  
 Interaction of light with dressed atoms .....Lin Fucheng, *et al.* (1009)  
 Speckle shearing interferometry with a normal grating.....Zhu Yiqing *et al.* (1118)  
 A study on diffraction intensity distribution through a zone plane.....Cheng Weiming *et al.* (1126)  
 Spherical aberrations of spherical waveguide geodesic lenses.....Xu Chengjie *et al.* (1131)

## Research Notes

- Experimental study of factors affecting enhancement of SERS spectra .....Ling Dehong *et al.* (1135)  
 Raman-scattering study of phase transition in LiKSO<sub>4</sub> at low temperature.....Gu Benyuan *et al.* (1140)

Data analysis of infrared reflection spectra of  $\text{LiNbO}_3$  and other crystals.....*Liu Yan et al.* (1146)

### No. 12

- Theoretical analysis of asymmetric pulse shapes in synchronous pumped dye lasers... *Bao Xiaoyi et al.* (1057)  
 Two-photon spectra of neutral Barium in high-lying states..... *Wu Donghong et al.* (1064)  
 Stimulated Raman scattering with cascade pumping in high pressure  $\text{H}_2$  ..... *Lou Qihong et al.* (1069)  
 Acousto-optic optical bistability in different states of acoustic field ..... *Dong Xiaoyi et al.* (1074)  
 Contour generation using spatial filtering..... *Li Yingquan et al.* (1082)  
 Shadow Moiré topography using spatial filtering..... *Li Yuan Yulin* (1090)  
 Some factors influencing efficiencies of self-sustained discharge transverse-flow  $\text{CO}_2$  lasers .....  
 ..... *Xu Jihua et al.* (1097)  
 Computer modeling for a lead vapor laser..... *Xia Tiejun et al.* (1104)  
 A simple analytical method for determining the optical gap of amorphous silicon films..... *Zhu Weijia* (1110)  
 Coupling system of Grin rod lenses in WDM..... *Liu Deming et al.* (1118)

### Research Notes

- Four-wave mixing in a copper vapor laser..... *Lin Fucheng et al.* (1127)  
 Determination of pulse shape asymmetry in a CW synchronously pumped dye laser using the method of spectrum-resolved SHG correlation..... *Bao Xiaoyi et al.* (1130)  
 A new analytic method for calculating waveguide dispersion of single-mode fibers..... *Wang Zhiqiang et al.* (1134)  
 '85 Annual Meeting of The Optical Society of China held in Shanghai..... *Yi Min et al.* (xvii)  
 The First National Symposium on Organic and Bio-luminescence held in Changchun, Jilin Province ...  
 ..... *Shen Shifan* (1129)  
 «Acta Optica Sinica», 1985, Vol. 5, Contents and Authors Index ..... ( i )