

课程编号：1713000830

课程名称：红外技术

学分/学时：2/32（示例：1.5/24）

先修课程：普通物理，光学

适用专业：应用物理学

课程性质：（选项：必修、限选、全校选修）限选

教材：石晓光，宦克为，高兰兰 编著. 红外物理（第2版）. 浙江大学出版社, 2013年

主要参考书：张建奇,方小平 编著. 红外物理（第2版）. 西安电子科技大学出版社, 2013年

内容简介：

《红外技术应用》是高等院校应用物理专业的一门专业课程，它表述了红外理论、概括了光信号的传输特性、描述了各种红外源、介绍了红外电光器件的新的特性、描述了红外光电子技术工业、军事系统中的应用、最后介绍了红外光电子传感器最有吸引力的深空与军事研究应用。本课程旨在理论与应用之间取得平衡。它除了包括红外基本理论框架之外，也覆盖了众多的题材和广泛的应用，同时论述了红外、光子、电光器件的性能并对必要的部分加以数学分析。本门课对于想拓宽应用于各种器件与传感器的红外与光电子技术的学生将是极为有利的。

Course Description

College of Science

Course Code: 1713000830

Course Name: Infrared Technique

Credit/Hours: 2/32

Textbooks : Shi Xiaoguang,Huan kewei,Gao Lanlan,. Infrared Physics(2nd Edition). Zhejiang University Press, 2013

Reference Books : Zhang Jianqi,Fang Xiaoqing. Infrared Physics(2nd Edition). Xidian University Press, 2013

Course Description:

"Infrared Technology " is a technical foundational and theory course for the students whose specialties applied physics group. It covers infrared theory, summes up the infrared optical signal transmission characteristics, describes the various infrared source, introduces a new infrared electro-optical devices , the application of infrared photonics technology in the industry and military systems, the applications of infrared photoelectron sensor in the most attractive deep-space research and military. The courses aims to strike a balance between the application and the theory. In addition to its basic infrared theory, it also covers many topics and a wide range of applications of the IR, photon, the performance of electro-optical devices and the mathematical analysis about the necessary parts. The course would be extremely beneficial to broaden the student's ability of application in various devices, infrared sensors and photonics technology.