MATE130074	固体材料光谱学	学分：2	周学时：2
	Spectroscopy of Solid State Materials	总学时：36	
预修课程：量子力学，材料物理基础			
修读对象：高年级本科生			

中文课程简介（150 字以内）

本课程首先介绍光与固体相互作用的基本概念，然后讲述光在介质中的传播。其次，结合能带理论介绍光的带间吸收、发射。再次，介绍固体中缺陷杂质态造成的光吸收和发射及特殊结构的光谱特征。在理解电子与光相互作用后，引入声子与光的相互作用。最后，结合研究前沿讨论光与微纳结构的相互作用如表面增强拉曼，光子晶体等。

英文课程简介

This course will firstly focus on the basic ideas related to interactions between light and solid state materials, and the prorogation of light in these media. The absorption and emission in solid state materials will be introduced on the basis of energy-band theory. The spectroscopy concerning defects and impurities in the solid state materials will then be presented. After aforementioned discussion about the electron-light interaction, the spectra reflecting the phonon-light interaction will be the point. Finally, the research front about interactions between light and novel micro-/nano-structures (e.g. surface-enhanced Raman spectroscopy and photonic crystal) will be depicted.