

English Frontiers of modern experimentation in materials science

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* Course Name	Chinese			
	English Frontiers of modern experimentation in materials science			
* Credits	2	* Teaching Hours	32 1 =16	
* Semester	Spring	* Cross-semester?	No	Spanning over Semesters
* Course Type	Program Elective Course	* Course Type	For full-time students	
* Course Category	Specialized Course	Targeting Students	Doctoral Level	
* Instruction Language	Chinese	Teaching Method	Online teaching	
* Grade	Letter grading	Exam Method	Essay	
* School				
Subject				
Person in charge	Name	ID	School	E-mail
				lantingzh@sjtu.edu.cn
English Frontiers of modern experimentation in materials science				
* () Course Description	1.	-	-	-
	2.			
	3.			
	1.			STEM, FIB, 3DAP, XRD
	2.			
	3.			
	4.			(PPMS)
	5.			(STM, AFM)
	6.			(XPS, AES)
7.			(ICP)	
8.				
9.				

	experiment	
	Infrared, Raman spectroscopy and experiment	2
	In-situ transmission electron microscopy characterization	2
	Synchrotron radiation principle and technology	2
	Condensed state spectroscopy and its application in semiconductor material physics research	2
	In-situ characterization of material behavior based on synchrotron radiation	2
	Progress in thermal analysis of modern polymer materials	2
* Requirements	1. 2.	50 30%
* English Requirements	1. Each lecture student needs to attend and attendance, and no grades will be given to those who miss more than 30% of classes! 2. Each student can combine their thesis work, choose two different aspects, and write two reading reports on the basis of expanding the reading literature.	
* Resources	1. , , , , 1982 2. J. W Edington, Practical Electron Microscopy, Pt. 1-4, Macmillan, 1974-76 3. J. C H Spence, Experimental High Resolution Electron Microscopy, Oxford, 1980 4. , , 1988 5. D C Joy, A D Ronig Jr. and J. I. Goldstein, Principles of Analytical Electron Microscopy, Plenum Press, New York, 1986 6. David B Williams, Practical Analytical Electron Microscopy in Materials Science, Philips Electronic Instruments Inc., Electron Optics Publishing Group, 1984 7. John J. Hen, Joseph I. Goldstein and David C. Joy, Introduction to Analytical Electron Microscopy, Plenum Press, New York, 1979 8. , , , , 1989 9. David B Williams and C. Barry Carter, Transmission Electron Microscopy – A Textbook for Materials Science 10. , , , , 2007	
* English Resources	1. , , Metal Electron Microscopy, , BeiJing, 1982 2. J.W. Edington, Practical Electron Microscopy, Pt. 1-4, Macmillan, 1974-76 3. J.C.H. Spence, Experimental High Resolution Electron Microscopy, Oxford, 1980 , , , , 1988 4. , High spatial resolution electron microscopy, , ,	

	<p>1988</p> <p>5. D.C. Joy, A.D. Romig, Jr. and J.I. Goldstein, Principles of Analytical Electron Microscopy, Plenum Press, New York, 1986</p> <p>6. David B. Williams, Practical Analytical Electron Microscopy in Materials Science, Philips Electronic Instruments Inc., Electron Optics Publishing Group, 1984</p> <p>7. John J. Hren, Joseph I. Goldstein and David C. Joy, Introduction to Analytical Electron Microscopy, Plenum Press, New York, 1979</p> <p>8. , , , Electron microscopic analysis of material structure, , 1989</p> <p>9. David B. Williams and C. Barry Carter, Transmission Electron Microscopy – A Textbook for Materials Science</p> <p>10. , Introduction to Analytical Electron Microscopy, , , 2007</p>
Note	