

PhD Degree Program in Materials Science and Engineering

ADMISSION

The School of Materials Science & Engineering offers graduate students with the PhD degree Program in Materials Science & Engineering. The program aims at bringing about adequate practical training opportunities for engineering graduates to enable them complete their training and attain professional status. To reach the target, students must have basic knowledge and profound expertise on materials science & engineering, have the technical ability to the preparation, processing and characterization of advanced materials, have the ability to carry out research works independently and can obtain creative achievements in science or expertise. To begin the PhD program in materials science and engineering in our school, a student must:

1. Have the academic qualification admitted by Jiangsu University.
2. Have obtained a Master degree in materials science or in a related disciplines before enrolling as a candidate for PhD degree.

RESEARCH FIELDS

The doctoral research in Materials Science and Engineering focuses on:

1. Functional and low dimensional materials
 - Preparation technology and application of micro-nano-powders
 - Research on the synthesis and properties of non-linear optical materials
 - Design and application of advanced functional fibers and thin films
2. Photonic materials and manufacturing science
 - Photonic material physics and characterization
 - Fabrication of non-photoelectron functional materials and devices
 - Transformation and strengthening in the sub-structure of materials
3. Preparation and Process Technology of high performance composite materials
 - Reaction synthesis of metal matrix composites under physical field.

- preparation technology of advanced non-metallic composite materials
- Optimized design of composite interface
- 4. Advanced technology of material molding
 - Advanced joining technique
 - Digital mold design and plastic forming technology
 - High performance alloy molding techniques
- 5. High-performance materials and surface technology
 - Development of solid lubricating materials and high temperature superconducting oxides
 - Research and development of high-performance materials
 - Technology of material surface modification

DEGREE REQUIREMENTS

The PhD degree in Materials Science & Engineering is based on successful completion of a minimum of 15 curriculum credit points following an approved program plan. Candidates for the PhD degree must complete a research proposal, published papers, thesis and oral examination in the thesis defense.

CURRICULUM

Course Category		Courses	Credit	Term	Remark
Degree courses	Public Compulsory	Overview of China	2		All
		Chinese	3		
	Core Courses	Chaotic dynamics	2		At least 2 courses
		Theory and application of functional analysis	2		
		Stochastic differential equation	2		
		Mathematical model	2		
		Structural chemistry of Advanced Material	2	2	
	Specialized Courses	Solid State Theory in Materials	2	2	At least 2 courses
		Thermodynamics and kinetics of Materials	2	1	
		Advanced Functional Materials	2	2	
Modern Characterizations in Materials Science		2	2		
Non-degree courses	Elective Courses	Introduction on Energy Materials Science and Technology	2	2	At least 1 course
		Tribology in materials	2	2	
		Computational materials science	2	2	
		Composite science	2	2	
		Photonic materials	2	2	
		Nanomaterials Science and Technology	2	2	
		Synthetic Chemistry of Inorganic Materials	2	2	
		Design and Analysis of New Polymers	2	2	