

* Co r e Name	Chine e 材料 中 仿 学原			
	Engli h Bionic Principle in Ma erial De ign			
* Credi	2	* Teaching Ho r	32 1 16	
* Seme er	Spring	* Cro - eme er?	No	Spanning o er Seme er
* Co r e Ca egor	Speciali ed Co r e	* Co r e T pe	For f ll- ime den	
* In r c ion Lang age	Chine e	Teaching Me hod	In cla eaching	
* Grade	Le er grading	E am Me hod	E a	
* School				
S bjec				
Per on in charge	Name	ID	School	E-mail
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* () Co r e De cription	<p>200</p> <p>本 天 命 构和 性, 揭 对 工作原 , 以此来为工 材料 提供新思想和新方 。仿 材料 契合国家低 、 保、可持 发展 念, 更 效地 决材料制备 中 模型优化 , 予材料 定功 , 并使其 更好地 于实 应 场景。本 将 与各分支学 前沿发展 合, 强 导向, 强化学 发 、分析和 决 力, 循新兴仿 学 关学 发展与 创新 律, 强 其中新原 、新 、新成果、新应 和 。本 料大多 来 于 二三十年 最前沿 展, 学 切 体会仿 学 域 快 发展 动 态, 发学 情, 培养学 兴 和创新思 。</p>			
* Engli h Co r e De cription	<p>This co r e- mmari e he recen ad ance -for he de ign of engineering ma erial in pired from r c re and proper ie- of na ral li ing em .The- de ign of biomime ic ma erial conform o he ra eg of lo -carbon, green econom , and ainable de elopmen in o r- na tional policie . I- can more- efficien l- op imi e he problem fo nd in ma erial prepara ion and de ign, endo ing ma erial - ih pecific f nc ion ha are be er adap i e o ac -al applica ion cenario . Thi co r e combine heore ical kno ledge ih- he c ing-edge de elopmen in differen field ,empha i ing re arch q e- ion and reng hening he- den ' abili- o di co er, anal e and ol e problem . Follo ing he de elopmen -and inno a ion la of emerging bionic , hi co r e empha i e ne principle , nder anding and applica ion of ne kno ledge, ne achie emen , and ne applica ion . Mo of he ma erial in hi co r e come from he mo c ing-edge re arch progre in he pa 20 o 30 ear , o ha den can e perience he rapid de elopmen in he field of bionic . Thi o ld im la e he den ' en h ia m for cien ific re earch, and c li a e den ' cien ific re earch in ere and inno a i e hinking.</p>			

	<p>1.1 2</p> <p>1.2 2</p> <p>1.3 2</p> <p>1.4 2</p> <p>1.5 2</p> <p>2.1 2</p> <p>2.2 2</p> <p>2.3 2</p> <p>2.4 2</p> <p>2.5 2</p> <p>3.1 2</p> <p>3.2 2</p> <p>3.3 2</p> <p>3.4 2</p> <p>3.5 2</p> <p>3.6 2</p>
* () S llab	
* Engli h S llab	<p><u>Chap er 1. Na ral S r c re-In pired Ma erial.</u></p> <p>1.1 In rod c ion o Bionic and Biominerali ed S r c re</p> <p>1.2 Bioin erface-in pired Ma erial .</p> <p>1.3 Na ral Spa ial Config ra ion-in pired Ma erial</p> <p>1.4 M li-pha e Biomime ic Compo ie Ma erial</p> <p>1.5 Biomime ic Hierarchical Ma erial</p> <p><u>Chap er 2. Na re-In pired F nc ional Ma erial</u></p> <p>2.1 Biomime ic F nc ional Par icle</p> <p>2.2 Biomime ic F nc ional Drople</p> <p>2.3 One-dimen ional Bionic Nano ire and Nanofibril</p> <p>2.4 T o-dimen ional Bionic F nc ional Membrane</p> <p>2.5 Three-dimen ional Bionic Self-healing Ma erial</p> <p><u>Chap er 3, Bionic S em and De ice</u></p> <p>3.1 Bioin pired Sen or</p> <p>3.2 Bioin pired Tran d cer</p> <p>3.3 Bioin pired Ac a or</p> <p>3.4 Bioin pired Robo ic & Implan able De ice</p> <p>3.5 Organ-on-chip & Ar ificial Organ</p> <p>3.6 In-cla Di c ion & Pre en a ion</p>
* Req iremen	<p>50</p> <p>1. 5 pp</p> <p>30%</p> <p>2. 70%</p> <p>60</p>
* Engli h Req iremen	<p>1. In-cla pre en a ion for 5 min e, pecif ing ho o appl he concep of bionic in he de ign of ne ma erial . Thi oral defen e ake o er 30% of o al core.</p> <p>2. Wri e a hor mmar ih he heme of biomime ic ma erial . Thi hor e a ake o er 70% of he o al core.</p> <p>O erall ra ing m be 60p /100p</p>
* Re o rce	_____
* Engli h Re o rce	In-cla co r e are