

* 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
		15329		Nano rface@j .ed .cn
* () 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 ional 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 i h 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 i h 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 style="text-align: center;">* () S llab</p>	<table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">1.1</td><td style="width: 80%;"></td><td style="width: 10%; text-align: right;">2</td></tr> <tr><td>1.2</td><td></td><td style="text-align: right;">2</td></tr> <tr><td>1.3</td><td></td><td style="text-align: right;">2</td></tr> <tr><td>1.4</td><td></td><td style="text-align: right;">2</td></tr> <tr><td>1.5</td><td></td><td style="text-align: right;">2</td></tr> <tr><td colspan="3"> </td></tr> <tr><td>2.1</td><td></td><td style="text-align: right;">2</td></tr> <tr><td>2.2</td><td></td><td style="text-align: right;">2</td></tr> <tr><td>2.3</td><td></td><td style="text-align: right;">2</td></tr> <tr><td>2.4</td><td></td><td style="text-align: right;">2</td></tr> <tr><td>2.5</td><td></td><td style="text-align: right;">2</td></tr> <tr><td colspan="3"> </td></tr> <tr><td>3.1</td><td></td><td style="text-align: right;">2</td></tr> <tr><td>3.2</td><td></td><td style="text-align: right;">2</td></tr> <tr><td>3.3</td><td></td><td style="text-align: right;">2</td></tr> <tr><td>3.4</td><td></td><td style="text-align: right;">2</td></tr> <tr><td>3.5</td><td></td><td style="text-align: right;">2</td></tr> <tr><td>3.6</td><td></td><td style="text-align: right;">2</td></tr> </table>	1.1		2	1.2		2	1.3		2	1.4		2	1.5		2				2.1		2	2.2		2	2.3		2	2.4		2	2.5		2				3.1		2	3.2		2	3.3		2	3.4		2	3.5		2	3.6		2
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<p style="text-align: center;">* Engli h S llab</p>	<p><u>Chap er 1. Na ral S r c re-In pired Ma erial</u> 1.1 In rod c ion o Bionic and Biominerali ed S r c re 1.2 Bioin erface-in pired Ma erial 1.3 Na ral Spa ial Config ra ion-in pired Ma erial 1.4 M li-pha e Biomime ic Compo i e Ma erial 1.5 Biomime ic Hierarchical Ma erial <u>Chap er 2. Na re-In pired F nc ional Ma erial</u> 2.1 Biomime ic F nc ional Par icle 2.2 Biomime ic F nc ional Drople 2.3 One-dimen ional Bionic Nano ire and Nanofibril 2.4 T o-dimen ional Bionic F nc ional Membrane 2.5 Three-dimen ional Bionic Self-healing Ma erial <u>Chap er 3. Bionic S em and De ice</u> 3.1 Bioin pired Sen or 3.2 Bioin pired Tran d cer 3.3 Bioin pired Ac a or 3.4 Bioin pired Robo ic & Implan able De ice 3.5 Organ-on-chip & Ar ificial Organ 3.6 In-cla Di c ion & Pre en a ion</p>																																																						
<p style="text-align: center;">* Req iremen</p>	<table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%;">1.</td><td style="width: 80%; text-align: center;">50</td><td style="width: 10%;"></td></tr> <tr><td>2.</td><td style="text-align: center;">5</td><td style="text-align: right;">pp</td></tr> <tr><td></td><td style="text-align: center;">30%</td><td style="text-align: right;">70%</td></tr> <tr><td></td><td style="text-align: center;">60</td><td></td></tr> </table>	1.	50		2.	5	pp		30%	70%		60																																											
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