

论文

蚊子体表面的微纳米结构与浸润性

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摘要:

通过光学显微镜及自行设计的接触角测试系统研究了成蚊体表面(如翅膀、复眼)的浸润行为, 发现了不同的体表面由于不同的生物功能而具有不同的超疏水特性. 通过扫描电子显微镜检测成蚊翅膀和复眼表面, 揭示了分布在成蚊体表面上的不同的微观结构形貌, 另外, 微米结构表面上还包含了纳米结构是其体表面微观结构的共同属性. 因此, 微纳米等级结构与浸润性之间存在重要的依赖关系.

关键词: 成蚊体表面 微纳米结构 浸润性 翅膀 复眼

Investigation on Microstructure and Wettability of Mosquito's Body Surface

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Abstract:

Wettability of mosquito's body surface(such as wings and eyes) was investigated by means of optical microscopy and self-design system and contact angle meter system. The anti-fogging properties on mosquito's eye and water-repellency of wings are mainly observed. It is found that there are different topographies of microstructures at different parts of mosquito's body surfaces such as wings and eyes observed by environmental scanning electron microscopy. It reveals the important relation of surface microstructure and biological adapted wettability, and is helpful to the biomimetic research in material preparation or surface design for functional interfaces.

Keywords: Mosquito's body surface Microstructure and nanostructure Wettability Wing Eye

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