<<膜科学与工程基础>>

图书基本信息

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内容概要

膜技术在许多领域发挥着主导作用，如海水淡化、废水处理与回用、人造器官等。

膜科学与工程基础（英文导读版）主要论述了膜科学与工程的传递现象基础，包括基于高分子、无机及混合基质膜材料表征分子分离过程中的渗透性和选择性，以及基于这些材料制备各种可能的形态（板式、管式、微胶囊式等）的膜的基本原理。
此外，还论述了用于表征的常见的一些基本方法。

作者简介

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章节摘录

版权页：插图：structure ofporous membranes. This can be done in awell-defined and ordered manner, like the introduc-tion of spherical chambers at the junctions of regular networks of capillaries , or in a random, order-less fashion.In both cases, one may assumeentirely random sampling of sphere and cylindersizes to decorate the network or prescribe some spatialcorrelation of sizes among chambers, among capil-laries, or among chambers and capillaries. Obviously,the predicrion of transport coecients in such porestructures has to resort to trajectory computations ornumerical techniques due to the inevitable appearanceof considerable overlapping among pore segments.Despite the increased complexity in the constructionof such pore space representations and in the predic-tion of their transport properties, they have foundextensive use in a wide variety of porous materials,including porous rocks, catalysts, membranes, etc. Themain supporting argument of their use is that theyappear to represent the pore space of a variety ofporous materials better than capillary networks do.In fact, optical or electron microscopy analysis ofconsolidated materials indicate the existence oflargepore spaces that are interconnected through narrowpore necks.ln addition,it is often convenient to repre-sent the nonsolid space of granular materials by acollection oflarge cavities and narrow interconnectors.Alternatively, these domains can also be representedby networks ofpore necks with converging-diverginggeometry (for instance, sinusoidally shaped ends). Theformer is more suitable for unconsolidated materials,whereas the latter is usually employed for the descrip-tion of the interstitial space in low porosity,.consolidated materials. Thanks to the limited poreoverlap in low porosity materials, the technique ofthe equivalent resistor network approximation can beused for the determination ofthe overall flow perme-ability or gas diffusivity.

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编辑推荐

《膜科学与工程大全:膜科学与工程基础(导读版)》展示和讨论了近年来膜科学与工程方面取得的一些最具重大作用的成果。
着重于膜技术在能源、环境、生物医学、生物技术、化学制造等领域的应用。
作者是膜领域的权威专家，其他编者均为相关领域的资深科学家。
适合材料、化学化工、环境等领域的师生、科研人员阅读参考。

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