

MXene Membranes for Separations

MXene Membranes for Separations Explore critical and groundbreaking MXene applications and technologies In MXene Membranes for Separations, a team of distinguished researchers delivers a comprehensive and instructive summary of the latest research and techniques in the development of MXene. It offers an insightful view of MXene properties as a membrane in separation applications, including gas separation, ion sieving, solvent dehydration, nanofiltration, and ultrafiltration. Covering various aspects of two-dimensional membranes based on MXene materials, the book summarizes the separation mechanism, compares separation performances, and analyzes the advantages and disadvantages of different approaches. It also considers the research and industrial prospects of current MXene membranes for separation applications on nanofiltration, gas separation, ion sieving, solvent dehydration, and water/oil separation. The book also includes: - A thorough introduction to 2D membranes, including membrane development, separation mechanisms, and fabrication methods - Comprehensive explorations of MXene nanosheets and membranes, including the preparation and characterization of MXene nanosheets and membranes - Practical discussions of MXene membranes for the isolation of antibiotics, including explorations of physical adsorption and advanced oxidation - In-depth examinations of MXene membranes for ion separation Perfect for membrane scientists, materials scientists, and inorganic chemists, MXene Membranes for Separations will also earn a place in the libraries of complex chemists and engineering scientists seeking a timely overview of critical MXene applications.

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