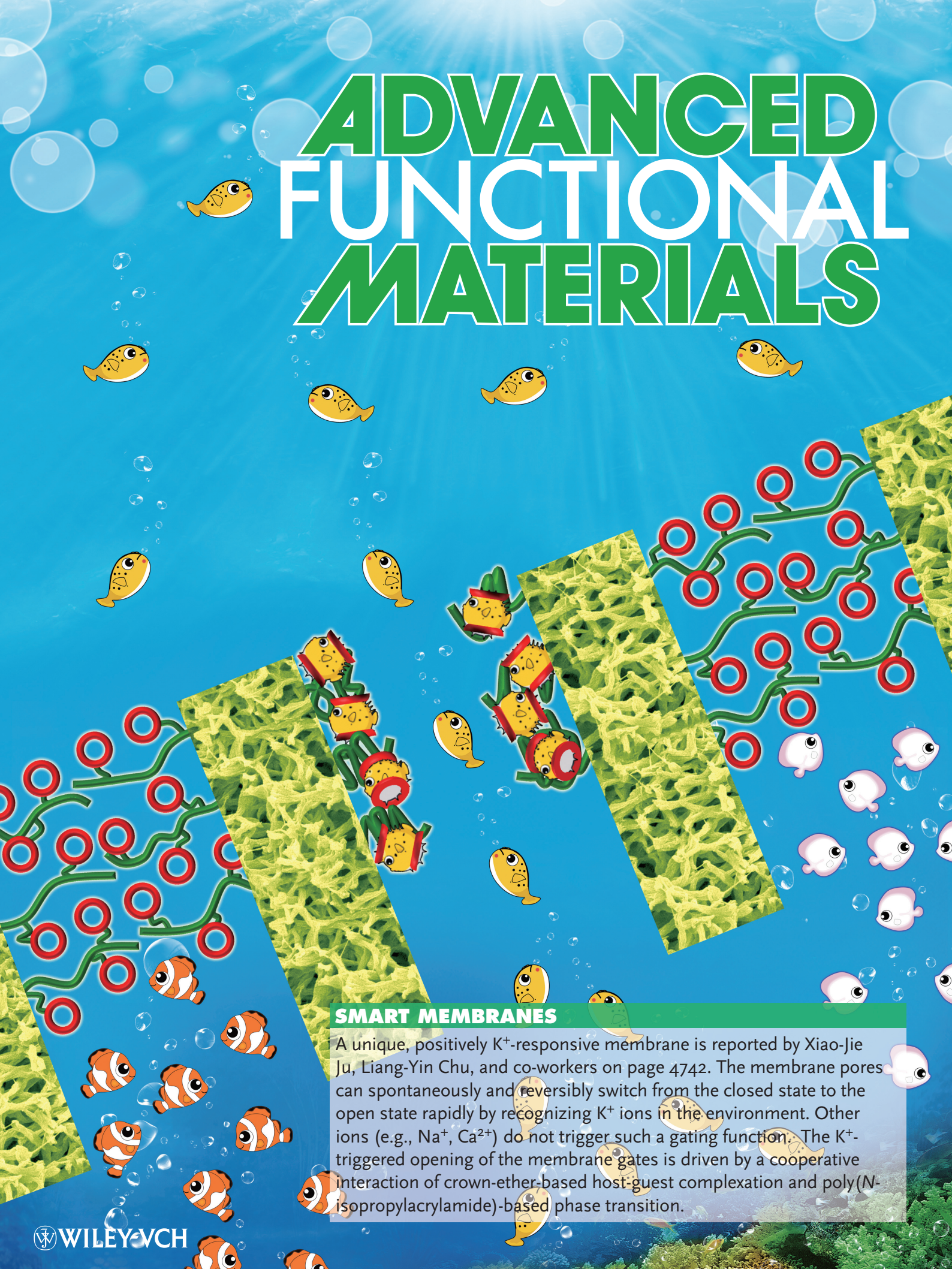


ADVANCED FUNCTIONAL MATERIALS

The background of the entire page is a vibrant blue underwater scene. It features several cartoonish yellow fish with black spots, orange and white striped clownfish, and small pinkish-white fish. Bubbles of various sizes float throughout the scene. A large, green, porous, sponge-like structure, representing a smart membrane, is positioned diagonally across the lower half of the page. This structure has red circular rings attached to its surface, which are part of a molecular structure. The title 'ADVANCED FUNCTIONAL MATERIALS' is prominently displayed at the top in large, bold, green and white letters.

SMART MEMBRANES

A unique, positively K^+ -responsive membrane is reported by Xiao-Jie Ju, Liang-Yin Chu, and co-workers on page 4742. The membrane pores can spontaneously and reversibly switch from the closed state to the open state rapidly by recognizing K^+ ions in the environment. Other ions (e.g., Na^+ , Ca^{2+}) do not trigger such a gating function. The K^+ -triggered opening of the membrane gates is driven by a cooperative interaction of crown-ether-based host-guest complexation and poly(*N*-isopropylacrylamide)-based phase transition.