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Cover Superlattices of p-nitroaniline molecules self-assemble and orient within the polar, 9-angstrom-wide channels of ALPO-5, a molecular sieve. Nanometer-scale clusters of molecules or semiconductors can have useful nonlinear optical and electronic properties. The dimensions of such clusters are comparable to the distances traveled by optically excited electrons. This issue of Science focuses on applications of physics and chemistry in the design of new materials. See page 669. [Photographic image by Mark Stucky]