Switch-Speed Considerations for Electrochromic Displays with Nanostructured Metal-Oxide Films M. O. M Edwards and A. Hagfeldt Dep. of Physical Chemistry, Uppsala University, Box 532, S-75121 Uppsala, Sweden

Electrochromic displays are, primarily due to their excellent optical properties, promising for electronicpaper applications. Here we report on the switching kinetics of reflective electrochromic displays with viologen-derivatized nanostructured TiO₂ electrodes. A capacitive nanostructured film of doped metal-oxide particles constitutes the counter electrode in the investigated display configuration. Results from electrochemical, spectroelectrochemical, and electrooptical measurements are presented and discussed in terms of e.g. a simple model for the charging kinetics. The focus is on the switch speed and how it is related to the electric driving and the display composition and geometry.