

***In-situ* picosecond transient diffuse reflectance spectroscopy of TiO₂ systems under microwave irradiation and influence of oxygen vacancies on UV-driven/microwave-assisted TiO₂ photocatalysis**

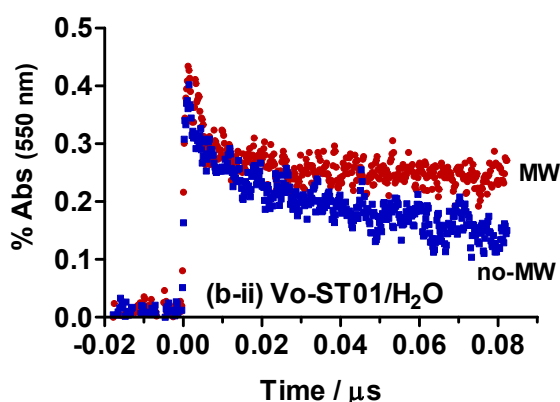
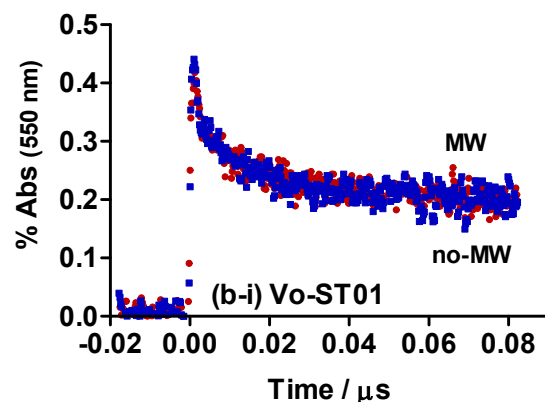
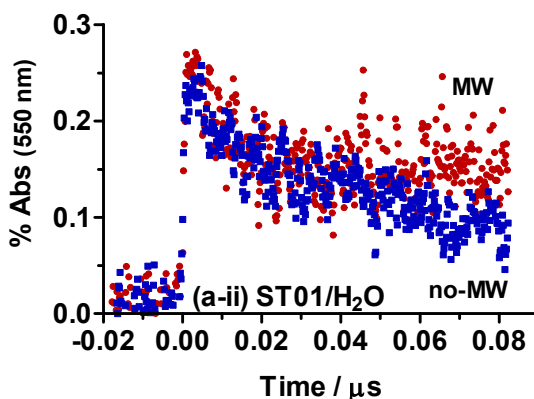
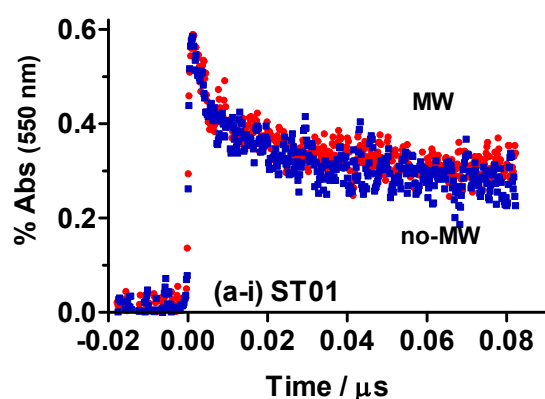
Satoshi Horikoshi,^{a*} Hideya Tsutsumi,^a Hiroyuki Matsuzaki,^b Akihiro Furube,^b Alexei V. Emeline,^c and Nick Serpone^{d*}

^a Department of Material & Life Science, Faculty of Science and Technology, Sophia University, 7-1 Kioicho, Chiyodaku, Tokyo 102-8554, Japan. Email: horikosi@sophia.ac.jp

^b Research Institute of Instrumentation Frontier (RIIF), National Institute of Advanced Industrial Science and Technology (AIST), 1-1-1 Umezono, Tsukuba, Ibaraki 305-8568, Japan

^c Laboratory of Photoactive Nanocomposite Materials, Saint-Petersburg State University, Ulianovskaia str. 1, Saint-Petersburg, 198504 Russian Federation.

^d PhotoGreen Laboratory, Dipartimento di Chimica, Università di Pavia, Via Taramelli 12, Pavia 27100, Italy. email: nick.serpone@unipv.it



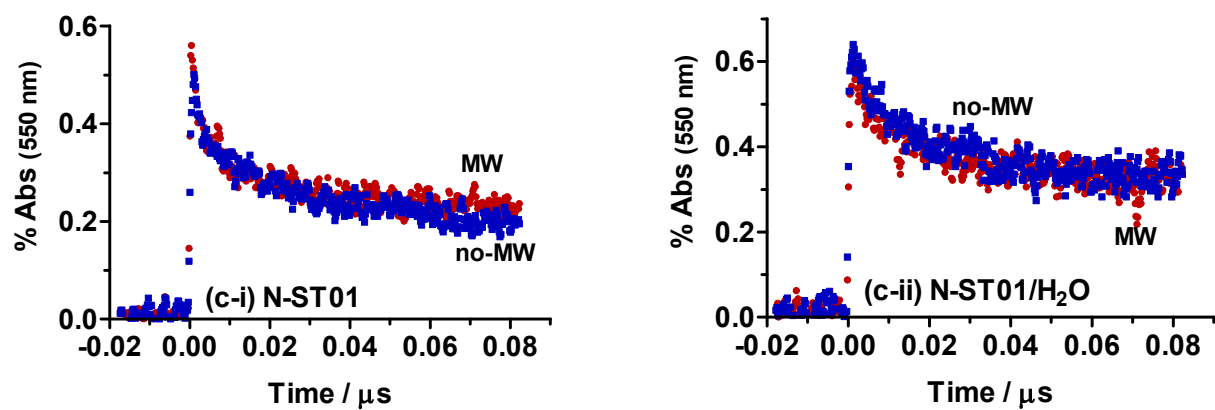


Figure S1. Original data of the decay of transient diffuse reflectance with and without microwave irradiation; (a-i) dry pristine ST01; (a-ii) wet pristine ST01 paste; (b-i) dry Vo-ST01; (b-ii) wet Vo-ST01 paste; (c-i) dry N-ST01; (c-ii) wet N-ST01 titania paste.