

Supplementary Information

Insoluble ordered polymeric pattern by breath figure approach

Alberto Bognesi, Francesco Galeotti,* Juliette Moreau, Umberto Giovanella, William Porzio, Guido Scavia,
and Fabio Bertini

Istituto per lo Studio delle Macromolecole - CNR, Milano, 20133 (Italy), and Polo Biotecnologico, Milano, 20138 (Italy)

Fax: +39 02 70636400; Tel: +39 02 23699739; E-mail: galeotti@ismac.cnr.it

Material available as supplementary information: FTIR of PFOTHP before and after thermal deprotection; extensive micrographs of PFOTHP thin films prepared by breath figure method, taken at SEM; AFM images of nanoporous film after thermal annealing and removal of PDMS; fluorescence microscopy images of bi-layer holey films and dichromic patterned films.

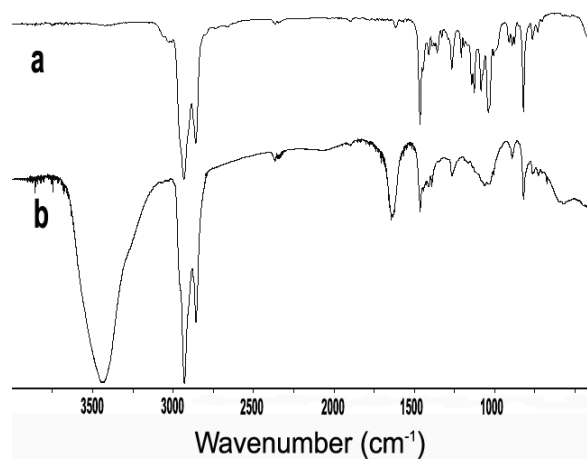


Figure 1. FTIR of PFOTHP before (a) and after (b) thermal deprotection.

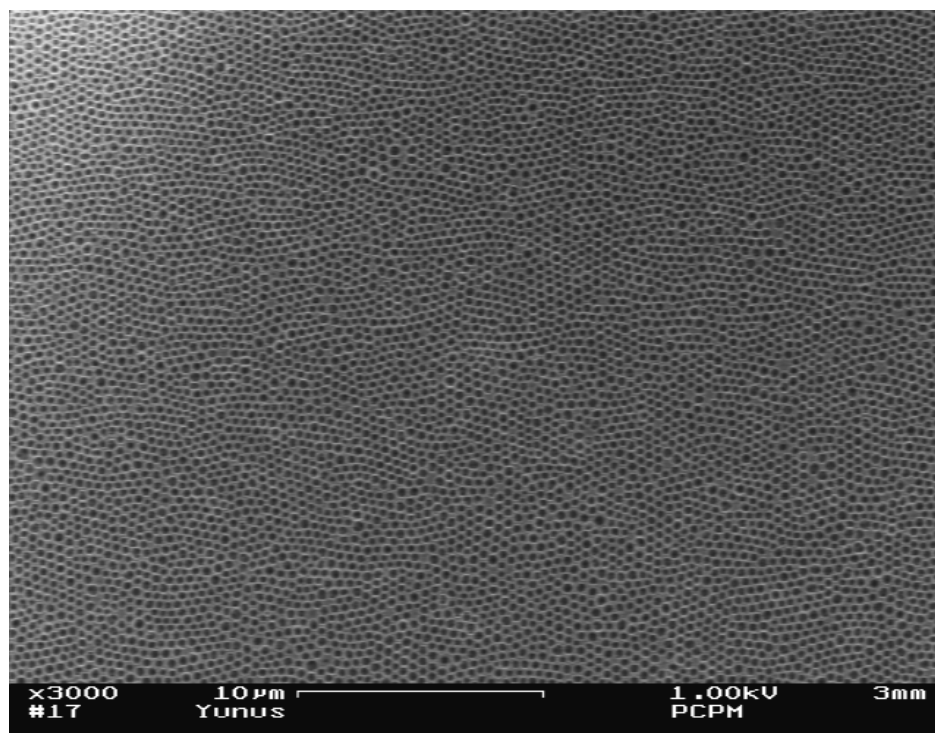


Figure 2. SEM micrograph (3000x) of PFOTHP nanoporous film.

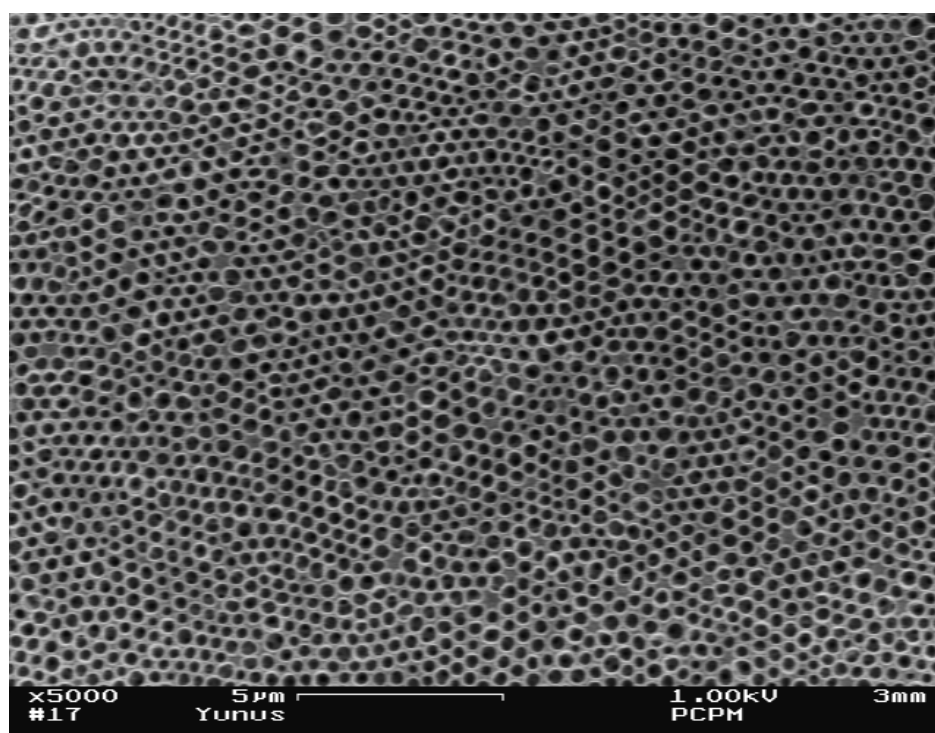


Figure 3. SEM micrograph (5000x) of PFOTHP nanoporous film.

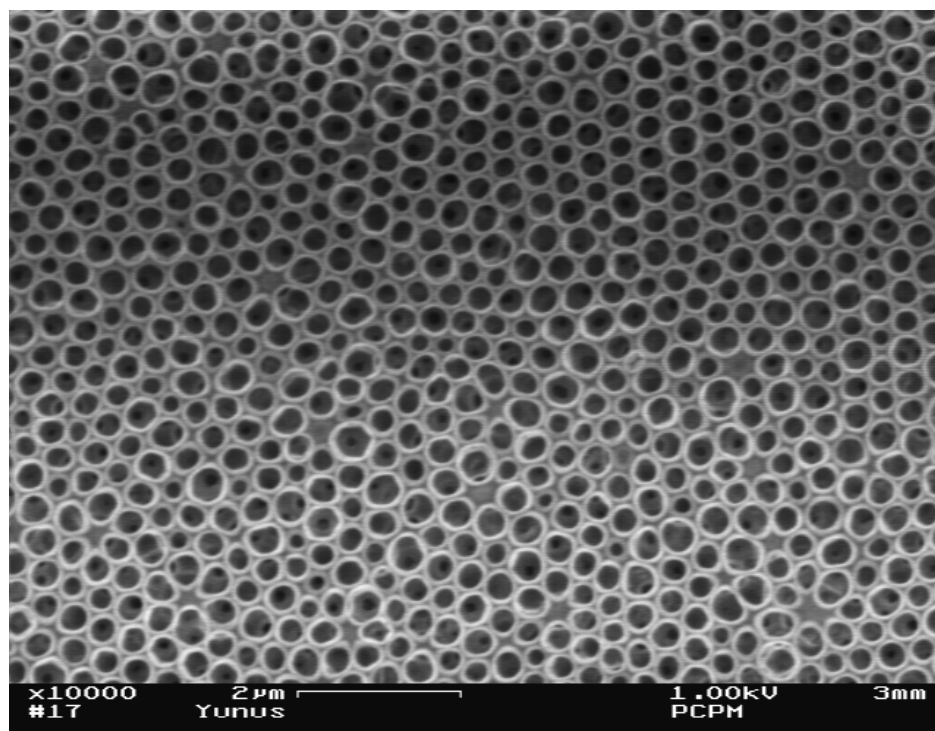


Figure 4. SEM micrograph (10000x) of PFOTHP nanoporous film.

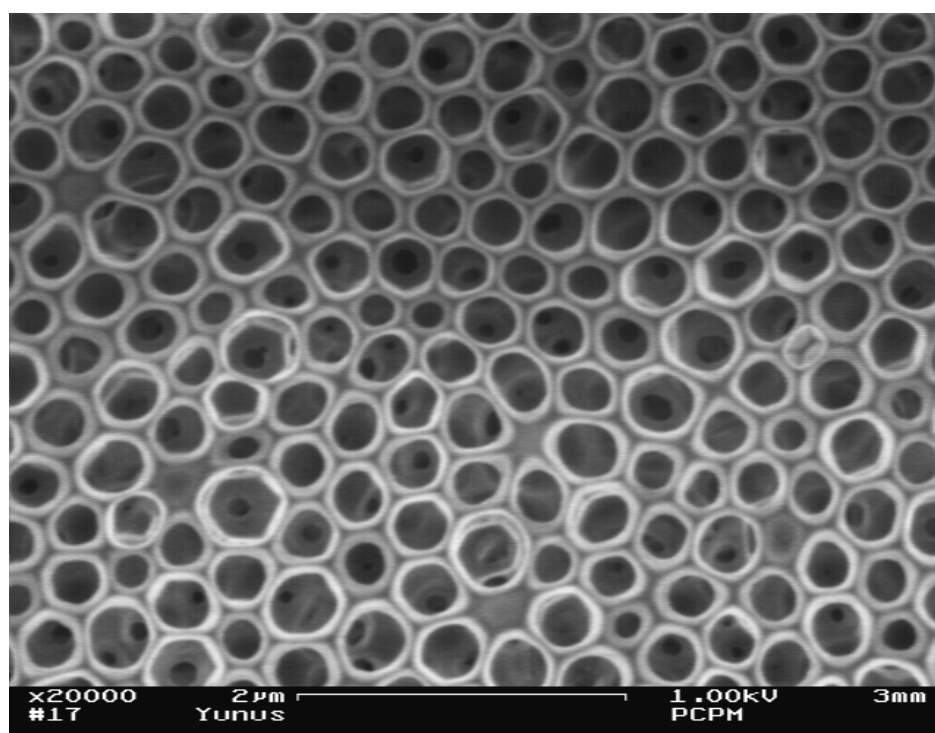


Figure 5. SEM micrograph (20000x) of PFOTHP nanoporous film.

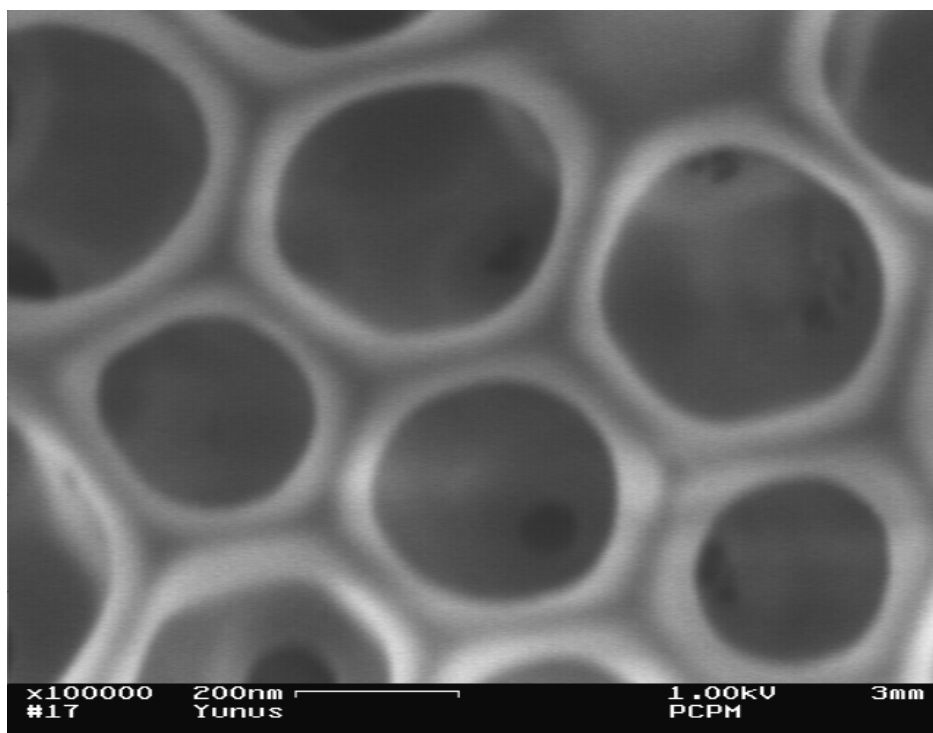


Figure 6. SEM micrograph (100000x) of PFOTHP nanoporous film.

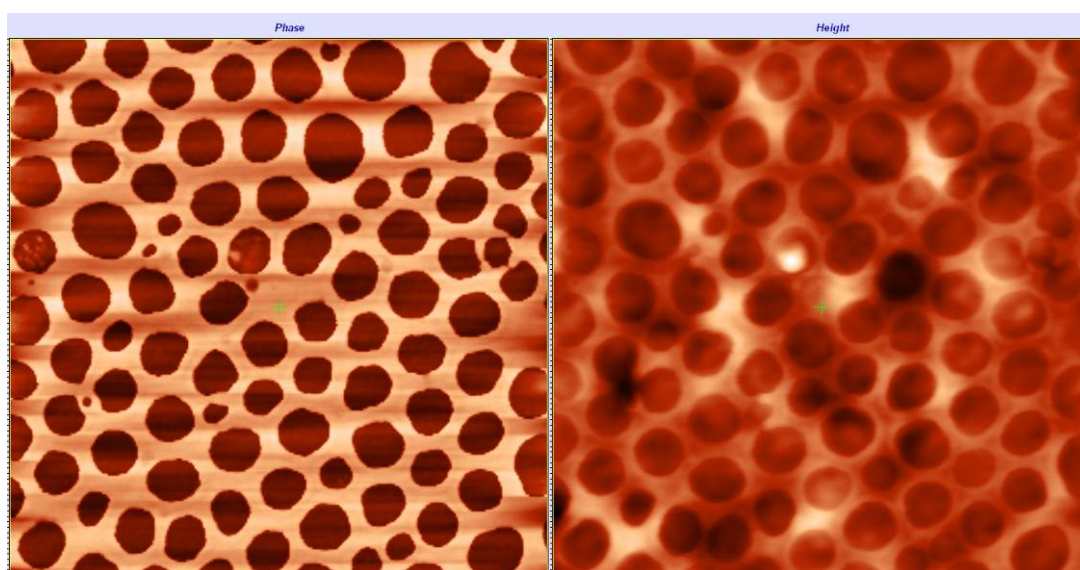


Figure 7. AFM phase and height images ($3.5 \times 3.5 \mu\text{m}$) of a PFOTHP nanoporous film which has been covered with PDMS and heated to 230°C x 2 h, after removal of the PDMS layer.

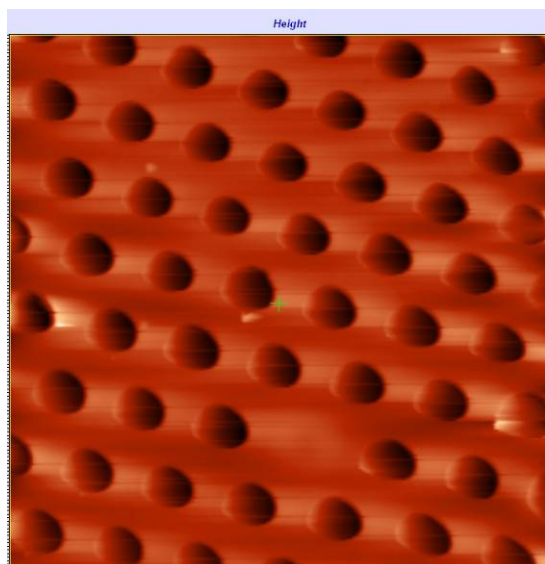


Figure 8. AFM height image ($30 \times 30 \mu\text{m}$) of double honeycomb film made of a bottom layer of PFOOH and a top layer of polystyrene labeled with a green fluorescent dye. The latter is the only layer visible by AFM.

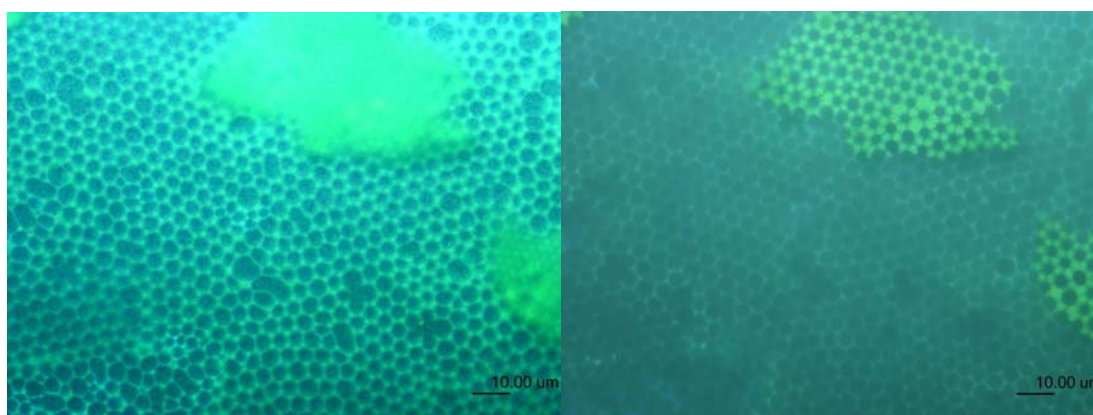


Figure 9. Fluorescence microscopy images of double holey film made of a bottom insoluble layer of PFOOH and a top layer of polystyrene labeled with a green fluorescent dye. The top layer was partially removed using a tape. The two micrographs that has been taken at a two different focus to evidence both layers.

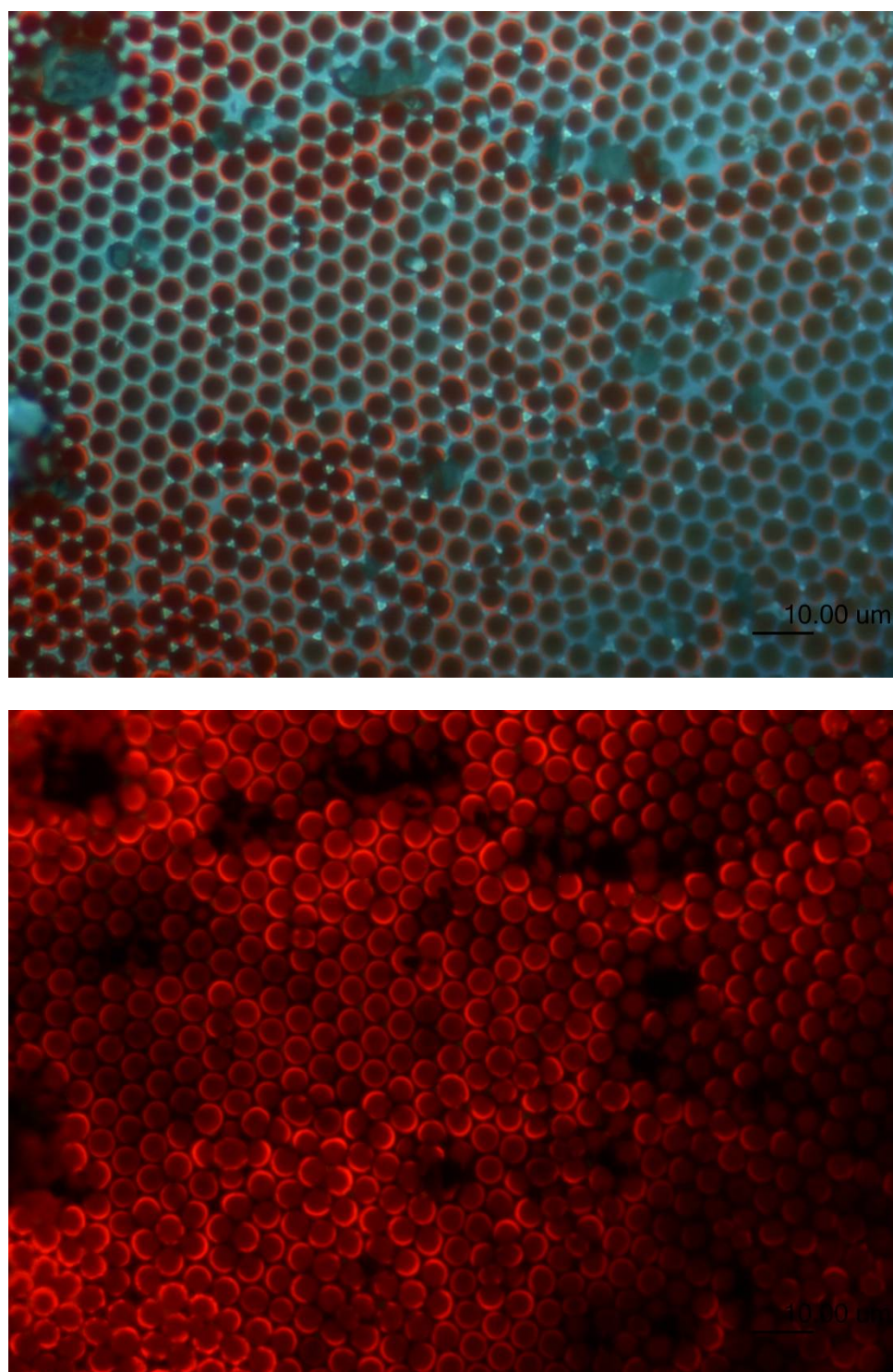


Figure 10. Dichromic fluorescent film made of PFOOH and PPV. The same sample is viewed at the fluorescence microscope using two different excitation wavelengths, 405 (top) and 488 (bottom) nm. Scale bar is 10 μm .

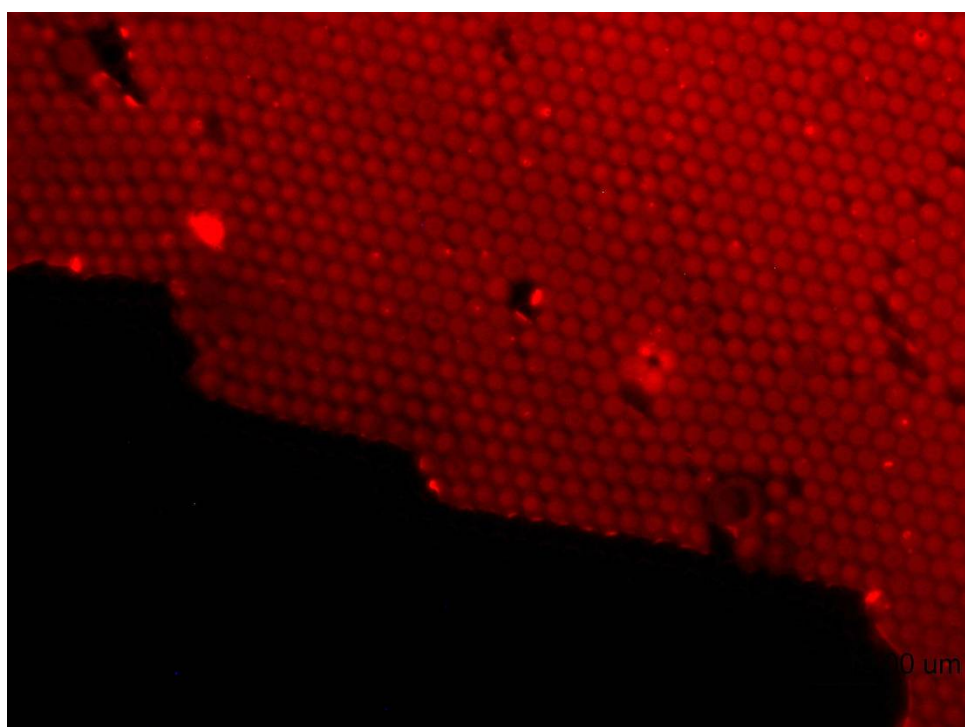
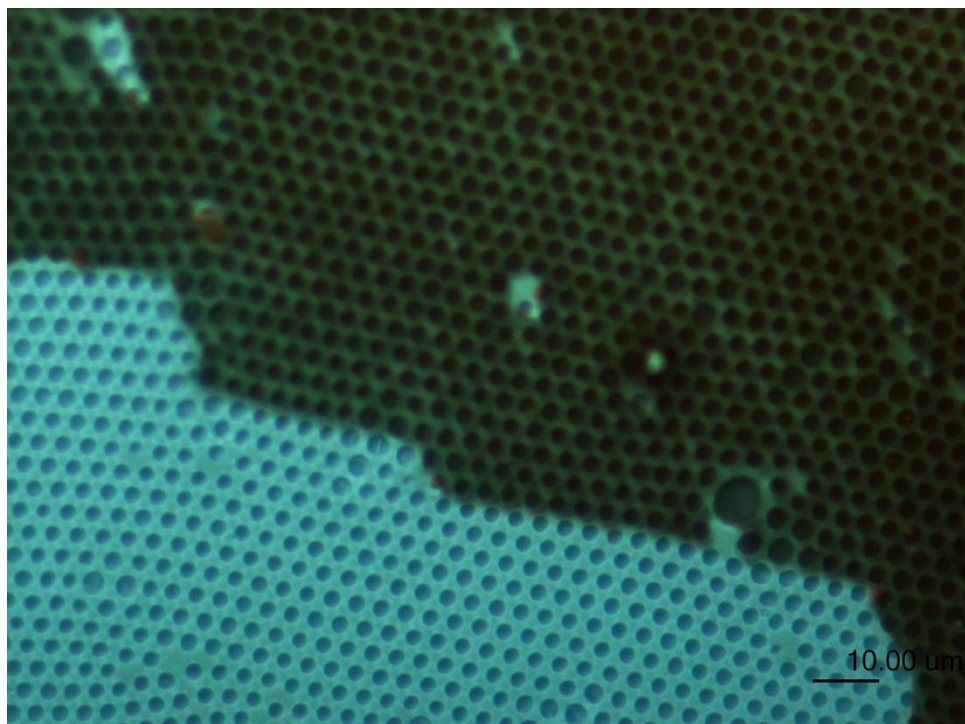


Figure 11. Bilayer honeycomb-structured film made of PFOOH and PPV. In the low-left angle of the sample, the top layer has been removed in order to show the bottom one. Excitation wavelengths are 405 (top) and 488 (bottom) nm.