



Regeneration of Pyrolyzed Photoresist Film by Heat Treatment

Andrew James Gross, Alison J. Downard

► To cite this version:

Andrew James Gross, Alison J. Downard. Regeneration of Pyrolyzed Photoresist Film by Heat Treatment. *Analytical Chemistry*, 2011, 83 (6), pp.2397-2402. 10.1021/ac103264v . hal-03016766

HAL Id: hal-03016766

<https://hal.science/hal-03016766>

Submitted on 20 Nov 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Supporting Information

Regeneration of Pyrolyzed Photoresist Film (PPF) by Heat Treatment

Andrew J. Gross and Alison J. Downard*

*MacDiarmid Institute for Advanced Materials and Nanotechnology, Department of Chemistry,
University of Canterbury, Private Bag 4800, Christchurch 8140, New Zealand*

*To whom correspondence should be addressed. Phone +64 3 364 2501. Fax +64 3 364 2110.

Email: alison.downard@canterbury.ac.nz

This supporting information contains Figures S-1, S-2, S-3 and Table S-1 with corresponding figure legends.

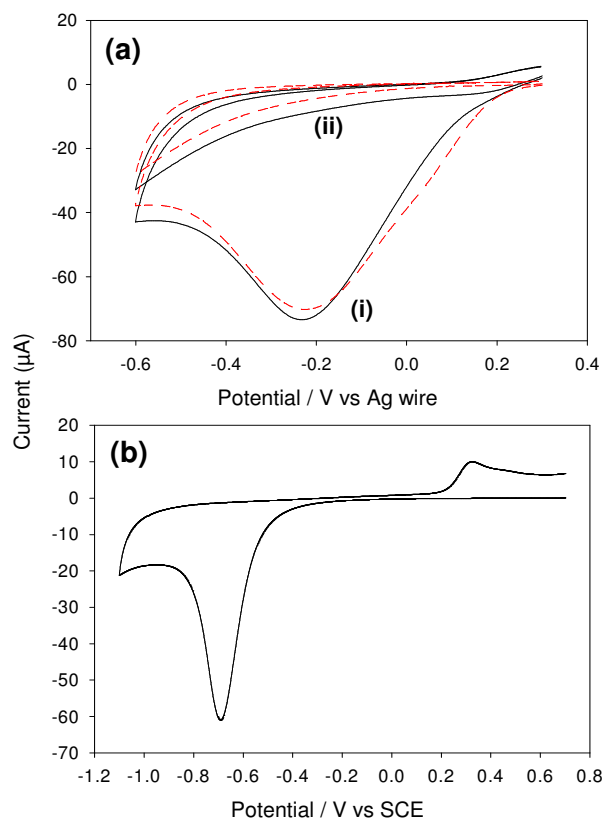


Figure S-1. (a) First (i) and second (ii) scan CVs of 1 mM NB_D in $[\text{Bu}_4\text{N}]\text{BF}_4\text{-ACN}$ at as-prepared PPF (black, solid) and heat-treated PPF-NP (red, dash). (b) First scan CV in 0.1 M H_2SO_4 at heat-treated PPF-NP subsequently re-modified with NP groups.

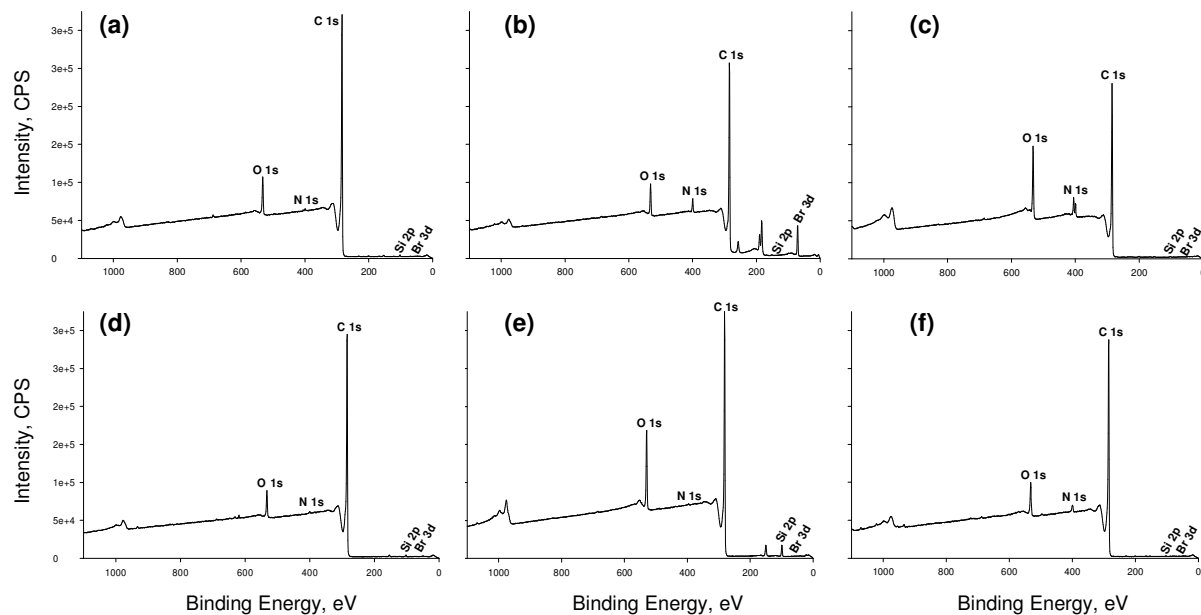


Figure S-2. XPS survey scan spectra for (a) as-prepared PPF, (b) PPF modified with BrP groups, (c) PPF modified with NP groups, (d) as-prepared PPF (heat treated), (e) PPF modified with BrP groups (heat treated) and (f) PPF modified with NP groups and subsequently heat treated. Heat treatment was performed using standard conditions (545 °C for 30 min under Ar).

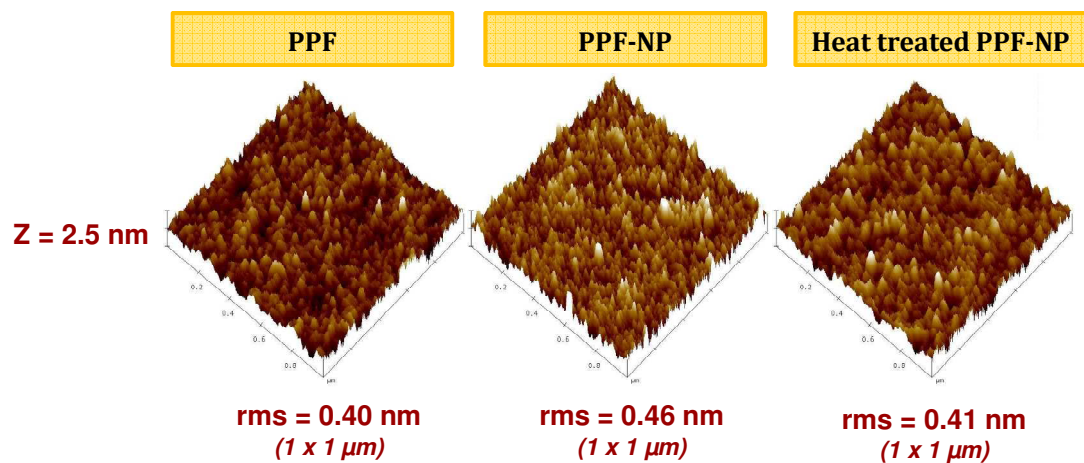


Figure S-3. Tapping mode AFM images of PPF as-prepared, after modification with an NP film and after subsequent heat treatment. Heat treatment was performed using standard conditions.

Table S-1. Water contact angle measurements at as-prepared PPF and PPF modified with NP groups before and after heat treatment. Heat treatment was performed using standard conditions.

PPF ^a	PPF ^a (heat treated)	PPF-NP	PPF-NP (heat treated)
75 ± 4 % ^b	77 ± 2 %	74 ± 4 %	76 ± 2 %
(n = 13) ^{c,e}	(n = 4)	(n = 9) ^d	(n = 6) ^d

^a as-prepared PPF. ^b values reported as mean ± RSD. ^c number of individual droplets measured (2 µl volume). ^d using two replicate electrodes. ^e using three replicate electrodes.