

## Supplementary Information

### Conducting Ink Based on Cellulose Nanocrystals and Polyaniline for Flexographical Printing

R.-M. Latonen<sup>a\*</sup>, A. Määttä<sup>b,†</sup>, P. Ihalainen<sup>b,‡</sup>, W. Xu<sup>c</sup>, M. Pesonen<sup>d</sup>, M. Nurmi<sup>e</sup> and C. Xu<sup>c</sup>

<sup>a</sup> Johan Gadolin Process Chemistry Centre, Laboratory of Analytical Chemistry, Faculty of Science and Engineering, Åbo Akademi University, Biskopsgatan 8, 20500 Turku/Åbo, Finland

<sup>b</sup> Center for Functional Materials, Laboratory of Physical Chemistry, Faculty of Science and Engineering, Åbo Akademi University, Porthansgatan 3-5, 20500 Turku/Åbo, Finland

<sup>c</sup> Johan Gadolin Process Chemistry Centre, Laboratory of Wood and Paper Chemistry, Faculty of Science and Engineering, Åbo Akademi University, Porthansgatan 3, 20500 Turku/Åbo, Finland

<sup>d</sup> Center for Functional Materials, Physics, Faculty of Science and Engineering, Åbo Akademi University, Porthansgatan 3, 20500 Turku/Åbo, Finland

<sup>e</sup> Center for Functional Materials, Laboratory of Paper Coating and Converting, Faculty of Science and Engineering, Åbo Akademi University, Porthansgatan 3, 20500 Turku/Åbo, Finland

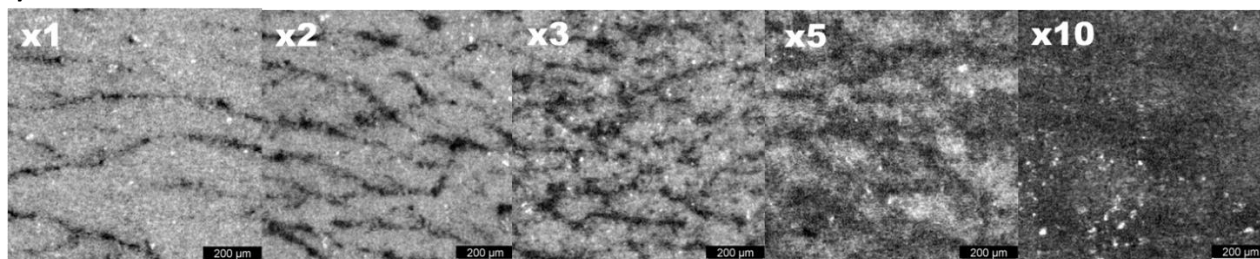
\* Corresponding author: Rose-Marie Latonen, e-mail: [rlatonen@abo.fi](mailto:rlatonen@abo.fi)

† Current address: Saule Technologies, Wrocław Technology Park, 11 Dunska Str., Sigma building, 54-427 Wrocław, Poland

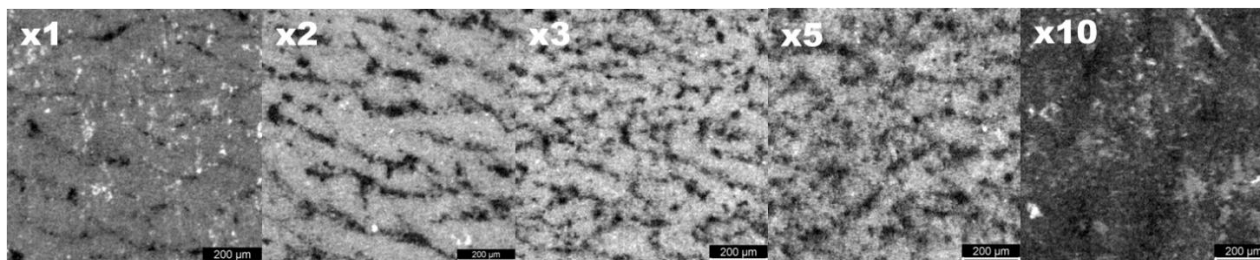
‡ Current address: MetGen Oy, Rakentajantie 26, 20780 Kaarina, Finland

## Results and discussion

a)

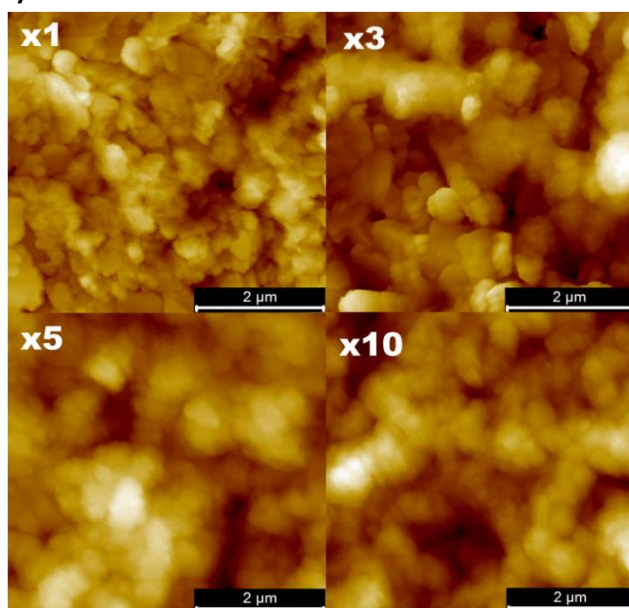


b)

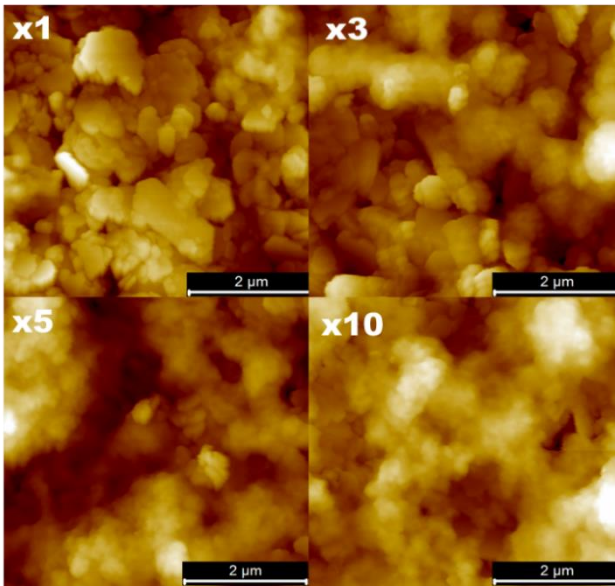


**Fig. S-1** Optical micrographs of **a)** 1, 2, 3, 5 and 10 layers of the CNC-PANI and **b)** 1, 2, 3, 5 and 10 layers of the PANI ink printed on MLCC paper.

a)



b)



**Fig. S-2**  $5\ \mu\text{m} \times 5\ \mu\text{m}$  AFM images of **a)** 1 (z-scale: 600 nm), 3 (z-scale: 500 nm), 5 (z-scale: 800 nm) and 10 (z-scale: 600 nm) layers of CNC-PANI ink and **b)** 1 (z-scale: 700 nm), 3 (z-scale: 800 nm), 5 (z-scale: 1000 nm) and 10 layers (z-scale: 1000 nm) of the PANI ink printed on MLCC paper.