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Title: Smart Options For Simultaneous Functionalization and Pigment Coloration of Cellulosic/Wool Blends

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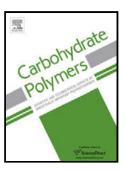
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## ACCEPTED MANUSCRIPT

| 1           | Smart Options For Simultaneous Functionalization and Pigment Coloration of  |
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| 2           | Cellulosic/Wool Blends  |
| 3           | N. A. Ibrahim a*, H. M. Khalilb, E. M. R. El-Zairyb, W. A. Abdallab   |
| 4<br>5<br>6 | <ul> <li><sup>a</sup> Textile Research Division, National Research Centre, Dokki, Cairo, Egypt.</li> <li><sup>b</sup> Faculty of Applied Arts, Printing, Dyeing and Finishing Department, Helwan University, Cairo, Egypt.</li> <li>ABSTRACT</li> </ul> |
| 7           | The present innovative research work deals with the individual use of chitosan (2.5g/Kg),   |
| 8           | Aloe vera (10g/Kg), triclosan (10g/Kg), TiO <sub>2</sub> -nanoparticles (TiO <sub>2</sub> -NP's ,10g/Kg), silicon micro-  |
| 9           | emulsion (20g/Kg) or a water/oil-repellent agent (40g/Kg) for modifying the pigment print paste   |
| 10          | to produce functionalized cotton/wool and viscose/wool pigment prints in one step process. The  |
| 11          | imparted functional properties such as antibacterial, antibacterial/UV-protection, soft-handle or   |
| 12          | water/oil-repellency together with the change in the printing properties were evaluated. Some of  |
| 13          | the obtained pigment prints were characterized by Scanning Electron Microscope (SEM), and   |
| 14          | Energy Dispersive X-rays (EDX) to confirm deposition of certain functional additives on printed   |
| 15          | fabrics. The wide-range of imparted functional properties together with the depth of the obtained   |
| 16          | pigment prints were maintained over 80% even after 15 consecutive laundering cycles. The  |
| 17          | extent of retention in functional and pigment printing properties is influenced by the type of  |
| 18          | functional additive as well as the kind of substrate.   |
| 19          |   |
| 20          | Keywords  |
| 21          | Cellulosic/Wool blends, Functional finishes, Pigment Printing, one step process, Chitosan, Aloe   |
| 22          | vera, Triclosan, Silicon softener, Water/oil repellent, TiO2-NP's.  |
| 23          |   |
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