Supplementary Material for Chemical Communications

Supplementary data

Large scale synthesis of uniform silver@carbon rich composite (carbon and cross-linked PVA) sub-microcables by a facile green chemistry carbonization approach

Lin-Bao Luo, Shu-Hong Yu*, Hai-Sheng Qian, Jun-Yan Gong

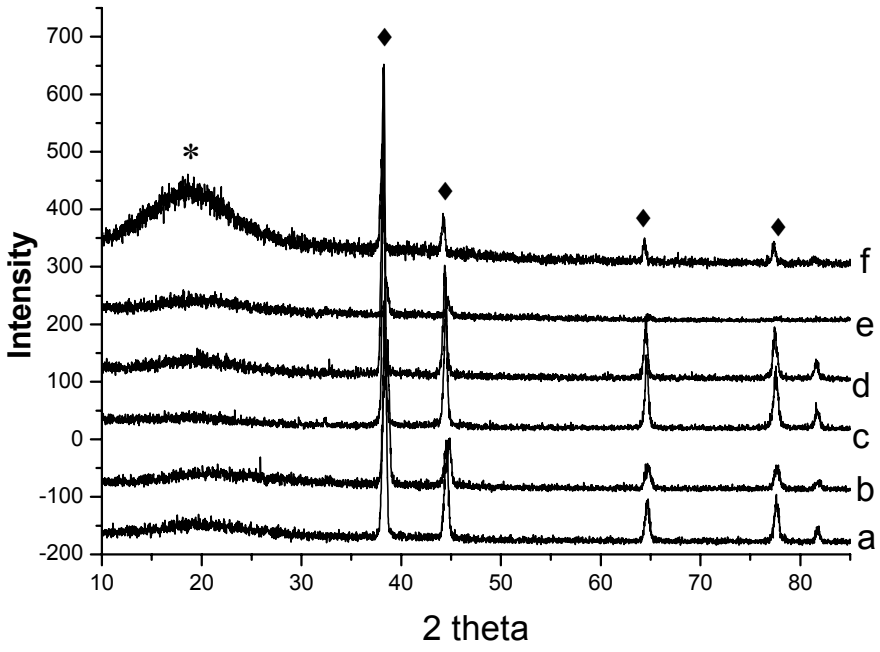
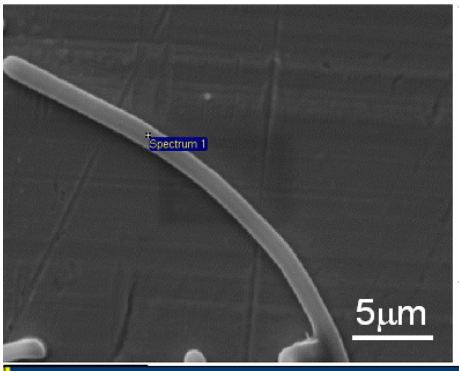


Fig. S1 (a)-(d) The XRD patterns of as-synthesized silver@carbon rich sub-microcables by a reaction of $AgNO_3$ with different carbon sources. (a) starch, (b) glucose, (c) β-cyclodextrin, (d) maltose. (e), (f) Carbon microspheres produced by a reaction of $AgNO_3$ with sucrose and fructose, respectively. * denotes carbon and ♦denotes silver phase.



Element	Weight%	Atomic%
C K	26.10	63.91
O K	9.46	17.38
Cu L	23.92	11.07
Ag L	12.78	3.49
Au M	27.74	4.14

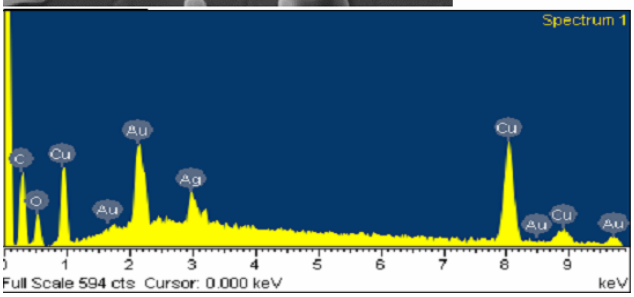


Fig. S2 EDS spectrum and its composition analysis of the as-synthesized silver@carbon rich sub-microcables by a reaction of $AgNO_3$ with starch.

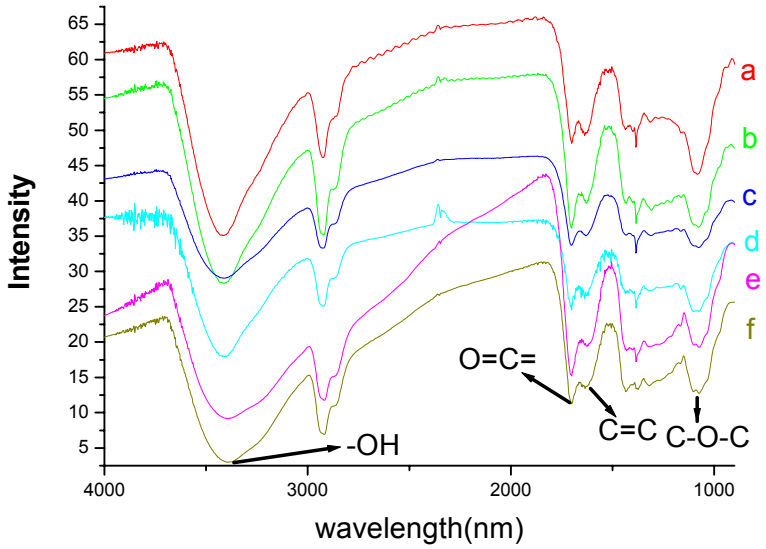


Fig. S3 FTIR spectra of nanocables and microspheres from different carbon sources: (a) starch, (b) glucose, (c) sucrose, (d) β-cyclodextrin, (e) fructose, (f) maltose.

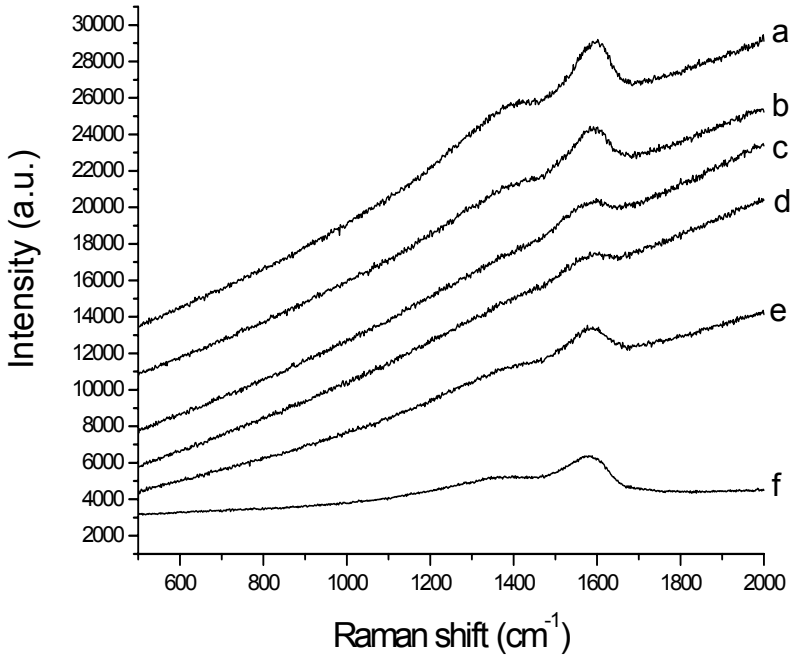


Fig. S4 UV-laser Raman spectra of silver@carbon rich composites sub-microcables through carbonization of (a) starch, (b) glucose, (c) β-cyclodextrin, (d) maltose and microspheres through carbonization of (e) sucrose, (f) fructose.

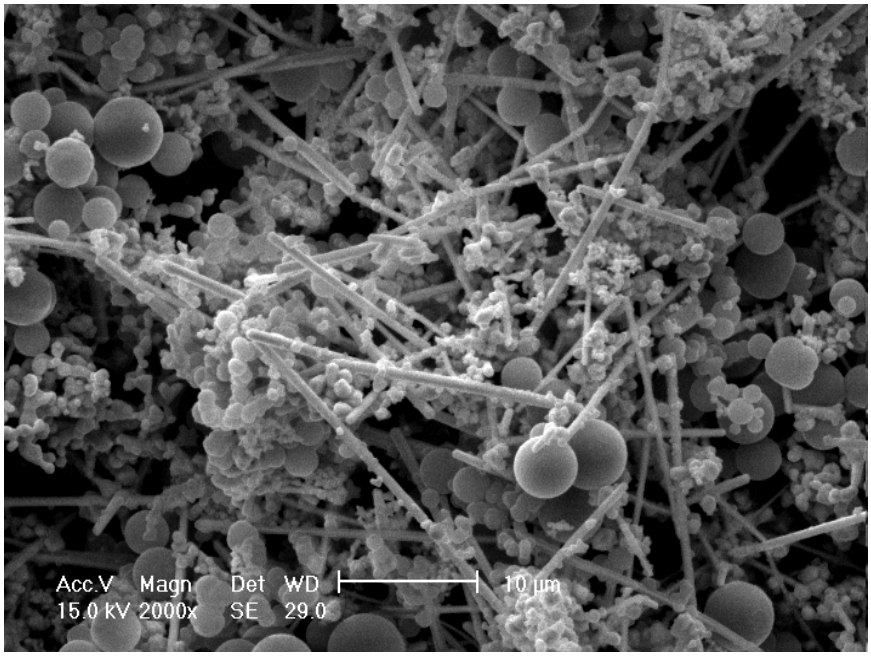


Fig. S5 SEM image of the sample prepared by hydrothermal reaction of 0.2 g $AgNO_3$ with 0.3 glucose at 180°C for 3 days.

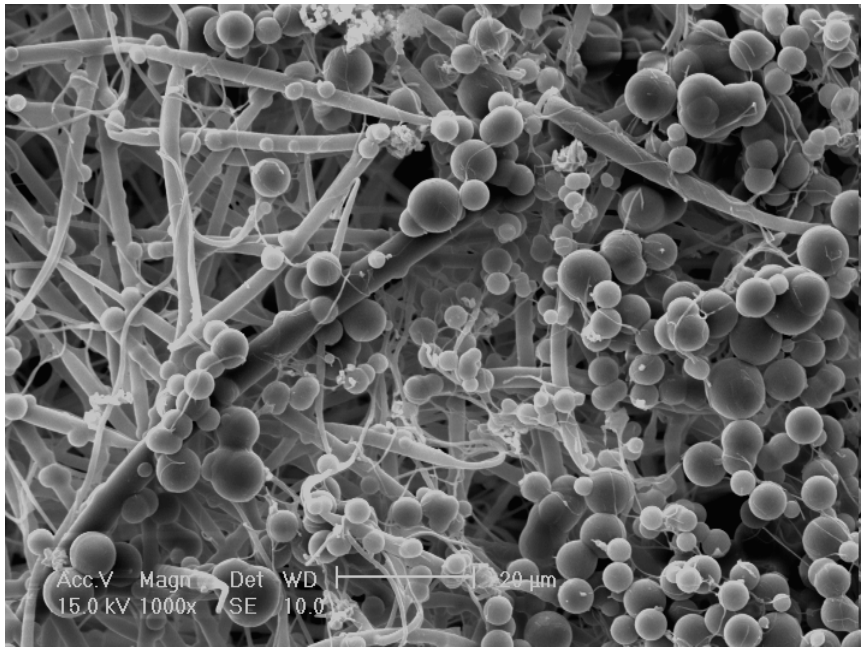


Fig. S6 SEM image of the sample prepared by reaction of 0.3 g $AgNO_3$, 5 ml PVA and 0.8 g glucose at 180 ^oC for 4 days.

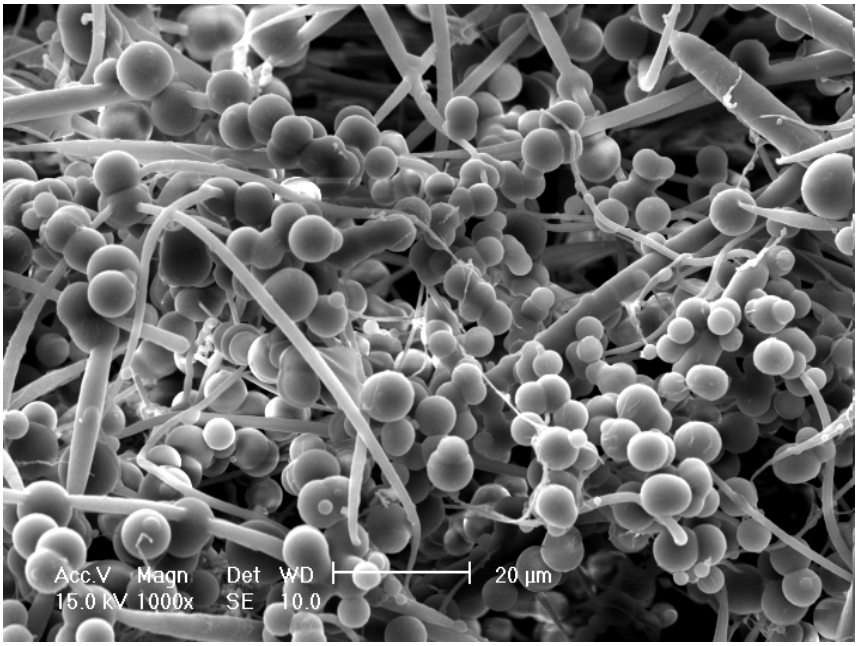


Fig. S7 SEM image of the sample prepared by reaction of 0.3 g $AgNO_3$, 5 ml PVA and 1.0 g glucose at 180 ^oC for 4 days.