

## Surface engineered biomimetic inks based on UV cross-linkable wood biopolymers for 3D printing

Wenyang Xu <sup>a</sup>, Xue Zhang <sup>b,†</sup>, Peiru Yang <sup>c,†</sup>, Otto Långvik <sup>d</sup>, Xiaoju Wang <sup>a,\*</sup>, Yongchao Zhang <sup>a</sup>, Fang Cheng <sup>c,e</sup>, Monika Österberg <sup>b</sup>, Stefan Willför <sup>a</sup>, Chunlin Xu <sup>a,f,\*</sup>

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

<sup>b</sup> Department of Bioproducts and Biosystems, School of Chemical Technology, Aalto University, FI-00076 Espoo, Finland

<sup>c</sup> Cell Biology, Faculty of Science and Engineering, Åbo Akademi University, Tykistökatu 6, 20520, Turku, Finland.

<sup>d</sup> Laboratory of Organic Chemistry, Johan Gadolin Process Chemistry Centre, Åbo Akademi University, Biskopsgatan 8, 20500 Turku, Finland

<sup>e</sup> School of Pharmaceutical Sciences (Shenzhen), Sun Yat-sen University, 510006 Guangzhou, China.

<sup>f</sup> Kemira Oyj, Espoo FI-02270, Finland

\* X. Wang: Xiaoju.Wang@abo.fi and C. Xu: Chunlin.Xu@abo.fi

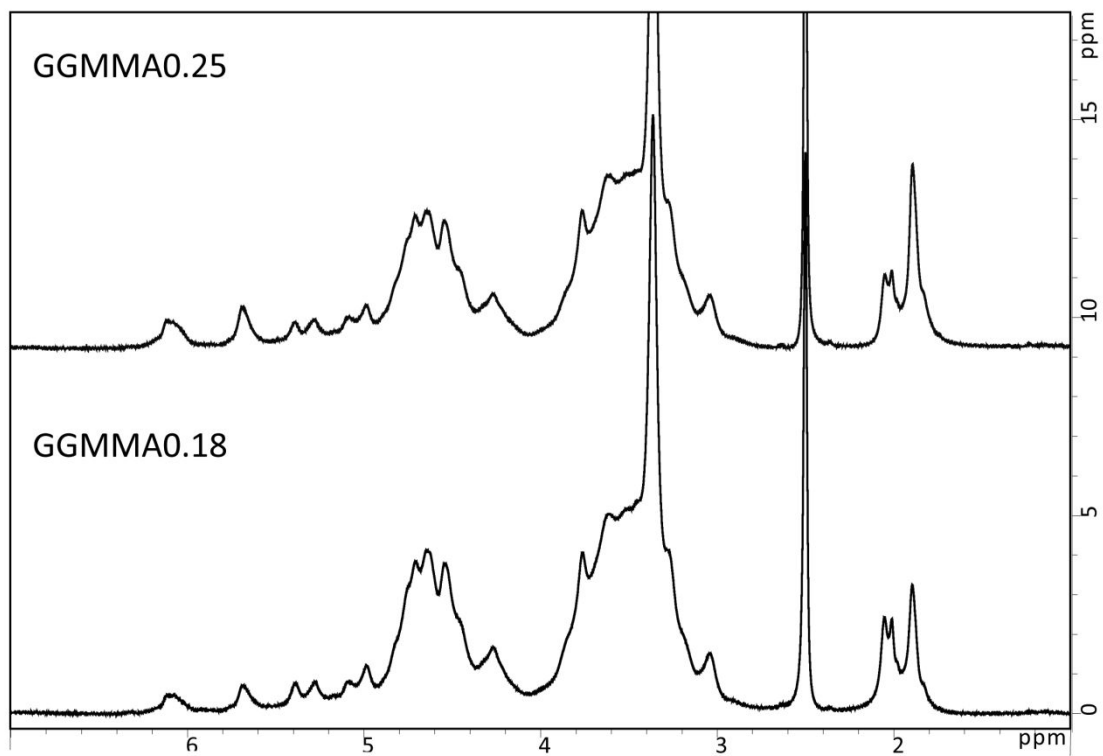


Figure S1. <sup>1</sup>H NMR spectra of GGMA0.18 and GGMA0.25 dissolved in DMSO-*d*<sub>6</sub>.

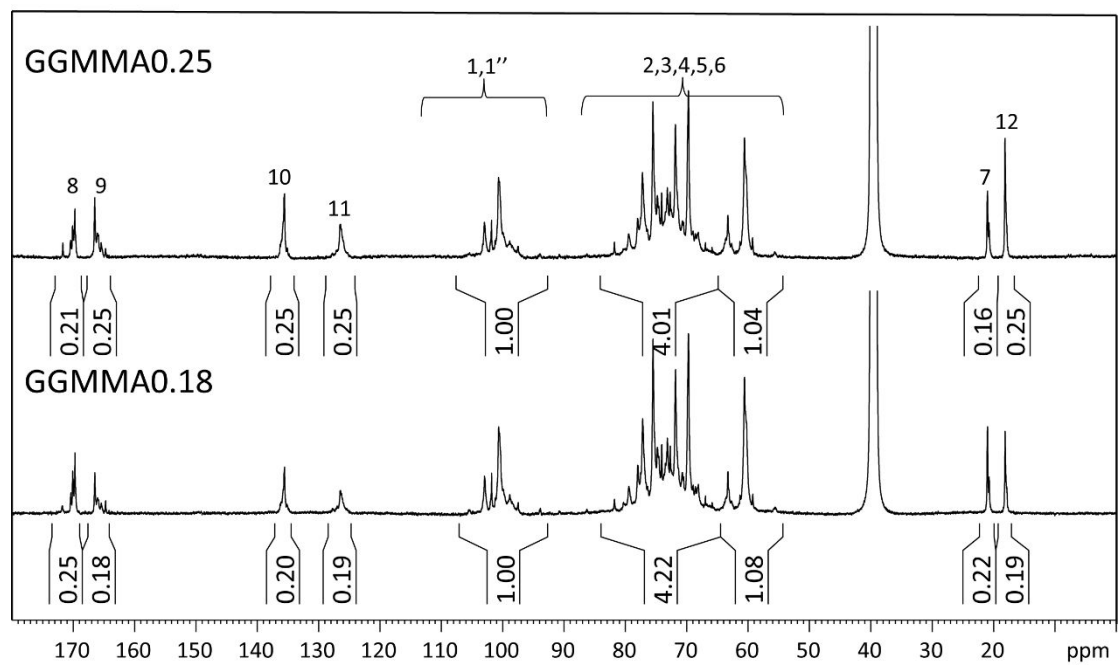


Figure S2. Quantitative <sup>13</sup>C NMR spectra of GGMAA0.18 and GGMAA0.25 dissolved in DMSO-d<sub>6</sub>.

Supporting information

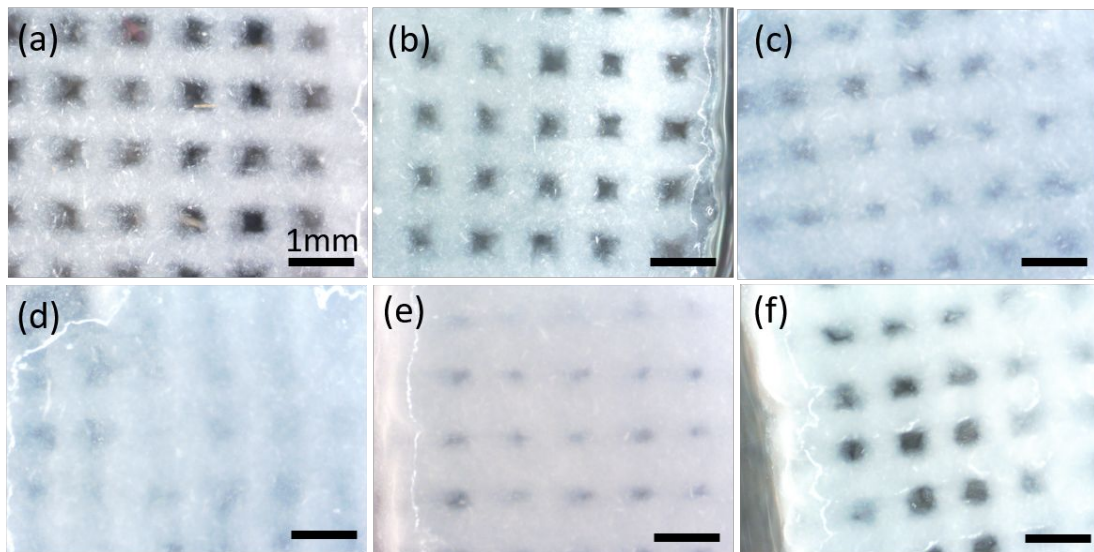


Figure S3. Images of the printed scaffold with dimensions of 10mm\*10mm\*2mm by inks of CNF (a), IA (b), IB (c), IC (d), IIC (e), and IIIB (f), respectively.

## Supporting information

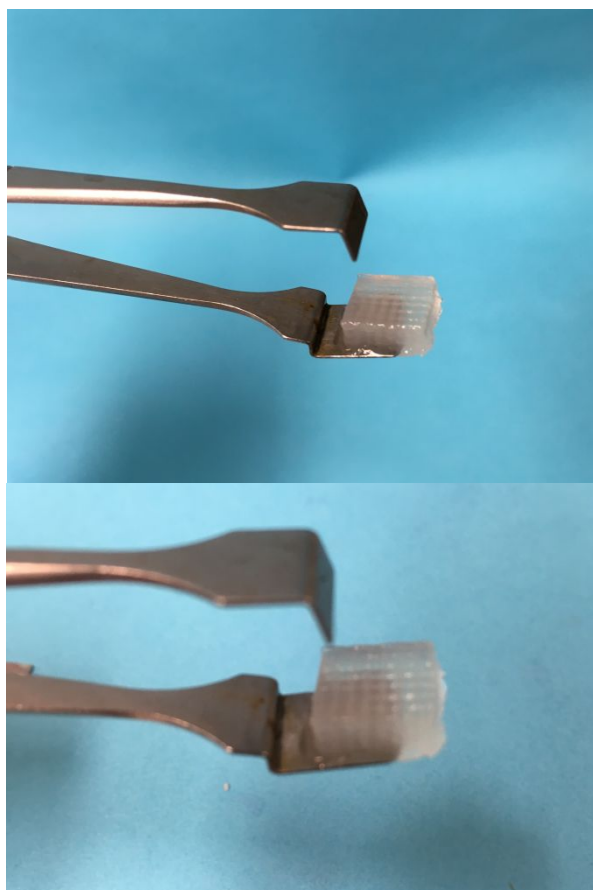


Figure S4. Images of the printed scaffold with dimensions of 10mm\*10mm\*4mm using ink IA

Table S1. Chemical composition analyzed by gas chromatography.

Sugar unit	Ara	Xyl	Rha	GlcA	GalA	Man	Gal	Glc
GGM	12.05	74.99	5.00	1.89	58.19	577.22	74.54	143.81

Note: Ara stands for arabinose, Xyl for xylose, Rha for rhamnose, GlcA for glucuronic acid, GalA for galacturonic acid, Man for mannose, Gal for galactose, Glc for Glucose