Electronic Supplementary Information: Simulation and Prediction of the Thermal Sintering Behavior for a Silver Nanoparticle Ink Based on Experimental Input

Sebastian Wünscher,[1,2]‡ Tobias Rasp,[3]‡ Michael Grouchko,[4] Alexander Kamyshny,[4] Renzo M. Paulus,[1,2] Jolke Perelaer,[1,2,5]* Torsten Kraft,[3] Shlomo Magdassi,[4] Ulrich S. Schubert[1,2,5]*

1 Laboratory of Organic and Macromolecular Chemistry (IOMC), Friedrich Schiller University Jena, Humboldtstr. 10, 07743 Jena, Germany.

2 Jena Center for Soft Matter (JCSM), Friedrich Schiller University Jena, Philosophenweg 7, 07743 Jena, Germany.

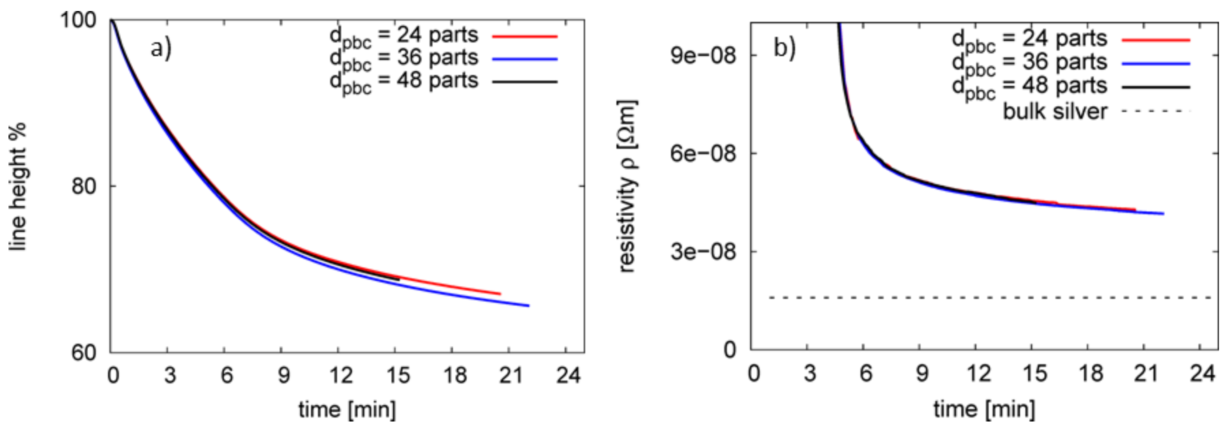
3 Fraunhofer Institute for Mechanics of Materials (IWM), Wöhlerstraße 11, 79108 Freiburg, Germany.

4 Casali Institute for Applied Chemistry, Institute of Chemistry, The Hebrew University of Jerusalem, Jerusalem 91904, Israel.

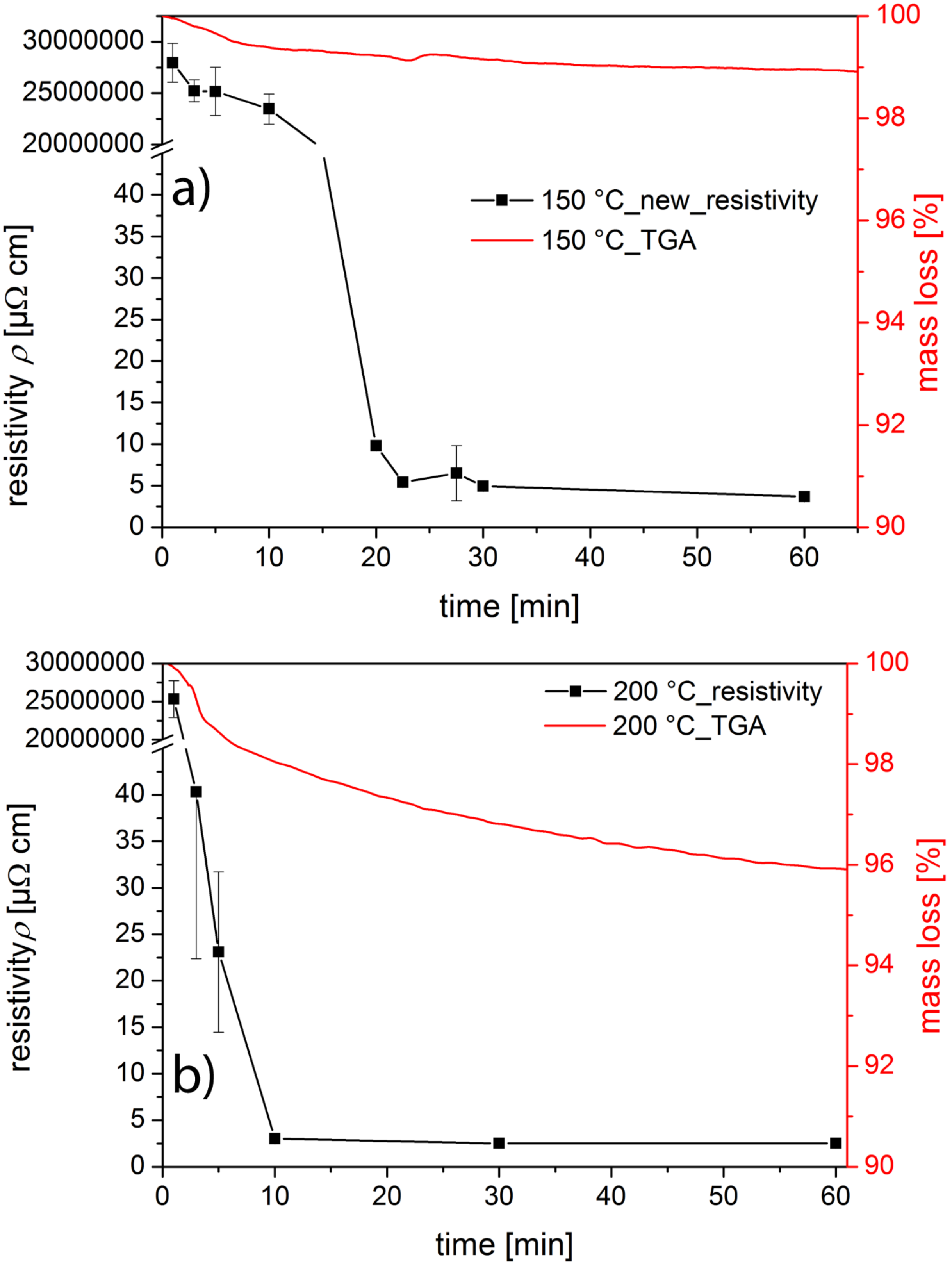
5 Dutch Polymer Institute (DPI), P.O. Box 513, 5600 MB Eindhoven, The Netherlands.

‡ Both authors contributed equally to the presented work.

E-mail: ulrich.schubert@uni-jena.de, jolke.perelaer@uni-jena.de



ESI Figure 1. Computed line height decrease (a) and resistivity development (b) for samples with varying sample length in lateral periodic direction d_{pbc} ranging from 24 x to 48 x particle diameter.



ESI Figure 2. Isothermal thermogravimetric analysis (TGA) of vacuum dried ink (**red line**) and resistivity (ρ) development over sintering time (t) (**black line and squares**) at a sintering temperature of 150 °C (**a**) and 200 °C (**b**).

ESI Table 1. Dedicated mass losses of the stabilizer from isothermal TGA and resistivity values of all temperatures at selected sintering times.

	Mass loss stabilizer / %			**ρ / µΩ cm**		
	150 °C	**175 °C**	**200 °C**	**150 °C**	**175 °C**	**200 °C**
5 min	3.3	5.4	13.1	2.5×10^7	8.7	23.1
10 min	6.0	6.6	18.9	2.3×10^7	4.2	3.0
30 min	8.3	12.0	30.9	5.0	4.0	2.5