

Supplementary Information for

JUUL ‘NEW TECHNOLOGY’ PODS EXHIBIT GREATER ELECTRICAL POWER AND NICOTINE OUTPUT THAN PREVIOUS DEVICES

Ebrahim Karam^{1,3}, BE; Soha Talih^{1,3}, PhD; Rola Salman^{1,3}, BS; Rachel El-Hage^{1,2}, MS; Nareg Karaoghlanian^{1,3}, BE; Ahmad El-Hellani^{1,2}, PhD; Najat Saliba^{1,2}, PhD; Alan Shihadeh^{1,3}, ScD*

¹ Mechanical Engineering Department, Maroun Semaan Faculty of Engineering and Architecture, American University of Beirut, Bliss Street, PO. Box 11-0236, Beirut, Lebanon

² Chemistry Department, Faculty of Arts and Sciences, American University of Beirut, Bliss Street, PO. Box 11-0236, Beirut, Lebanon

³ Center for the Study of Tobacco Products, Virginia Commonwealth University, 821 West Franklin Street, Richmond, Virginia 23284, United States

* Corresponding Author: Alan Shihadeh

Tel: + 961 1 344444

Email address: as20@aub.edu.lb

Address: American University of Beirut
PO Box 11-0236 Beirut, Lebanon

The thermogravimetric analysis spectrum obtained for the new technology JUUL wick showed a decay in % mass between 300 and 400°C (Figure S1), which matches the degradation profile of cotton reported in the literature.¹

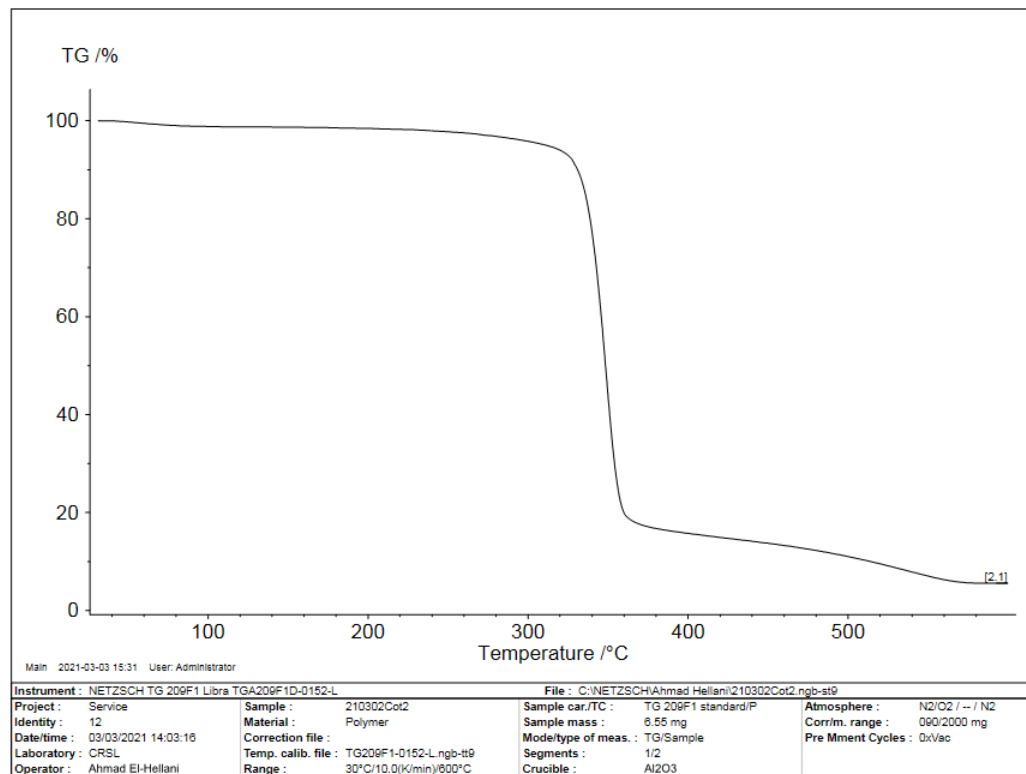


Figure S1 TGA spectrum of the degradation of JUUL new technology wick

The FTIR spectra of the degradation products in the mass decay region between 300 and 450°C showed the generation of typical cotton pyrolytic degradation products including molecules with free OH (glucose) and C=O bands (carbonyl compounds), in addition to small gases (CO and CO₂) (Figure S2).^{2,3}

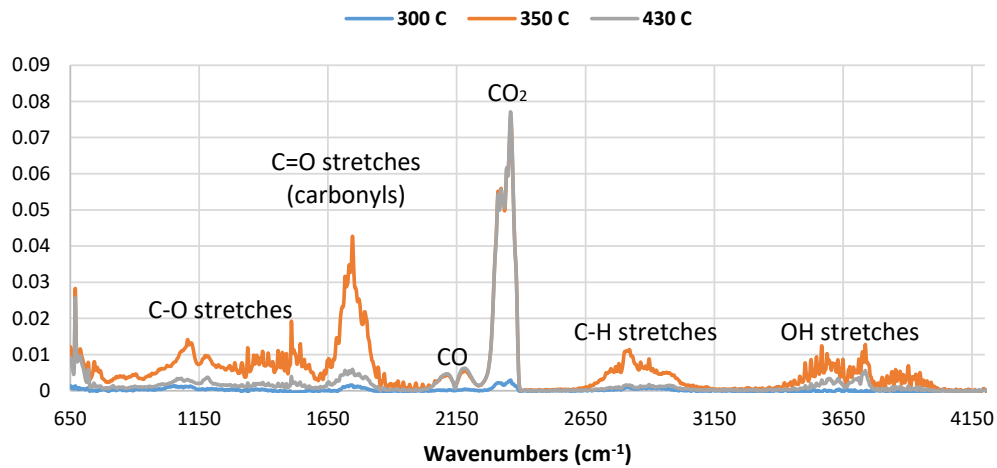


Figure S2 FTIR spectra of the degradation of the new technology JUUL wick between 300 and 450°C.

¹ Nouredine Abidi, Eric Hequet, Dean Ethridge. Thermogravimetric Analysis of Cotton Fibers: Relationships with Maturity and Fineness. *Journal of Applied Polymer Science*, 2007, 103(6):3476-3482.

² D.K. Shen, S. Gu. The mechanism for thermal decomposition of cellulose and its main products. *Bioresource Technology*, 2009,100:6496-6504.

³ Robert f. schwenker, jr., Eugene pacsu. Pyrolytic Degradation Products of Cellulose. CHEMICAL AND ENGINEERING DATA SERIES, 1957, 2, 83-88.