

SUPPORTING INFORMATION

Development of a Series of Biobased Poly(ethylene 2,5-
furandicarboxylate-co-(5,5'-
((phenethylazanediyl)bis(methylene))bis(furan-5,2-diyl))dimethylene 2,5-
furandicarboxylate) Copolymers via a Sustainable and Mild Route:
Promising “Breathing” Food Packaging Materials

Jing Yi^{a,b}, Yuxuan Li^b, Yuhao Zhao^b, Zhanwei Xu^c, Yuanpeng Wu^{a,*}, Min Jiang^{b,*},
Guangyuan Zhou^{b,*}

^a School of New Energy and Materials, State Key Laboratory of Oil and Gas Reservoir
Geology and Exploitation, Southwest Petroleum University, Chengdu, 610500, China.

^b Division of Energy Materials (DNL 22), Dalian Institute of Chemical Physics, Chinese
Academy of Sciences, Dalian, 116023, China.

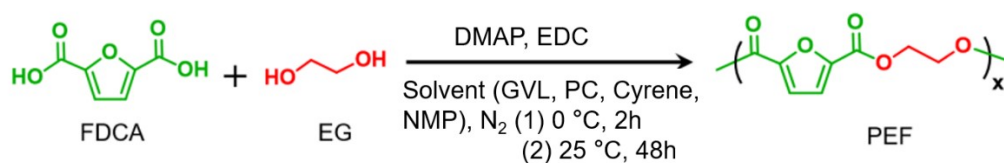
^c Dalian National Lab for Clean Energy, State Key Laboratory of Catalysis, Dalian
Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, 116023, China.

* Corresponding author:

E-mail address: jiangmin@dicp.ac.cn (Min Jiang)

E-mail address: ypwu@swpu.edu.cn (Yuanpeng Wu)

E-mail address: gyzhou@dicp.ac.cn (Guangyuan Zhou)



Scheme S1. Synthesis route of PEF with different solvents.

Table S1. Characters of conventional dipolar aprotic solvent (NMP) and green solvents (GVL, PC and Cyrene).

Solvents	M _w (g/mol)	Boiling point (°C)	Density (g/mL)	Dipolarity	LD50, Oral-rat (mg/kg)
GVL	100.11	207	1.04	0.83	8800
PC	102.09	242	1.21	0.83	34900
Cyrene	128.13	227	1.25	0.93	> 2000
NMP	99.13	202	1.028	0.92	3914

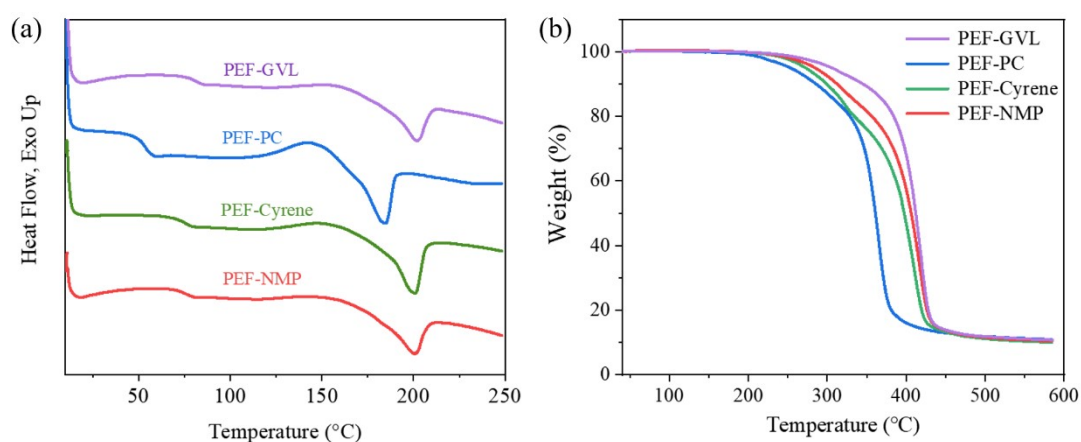


Figure S1. (a) Second heating DSC curves and (b) TGA curves of PEF with different solvents.

Table S2. Thermal properties of PEF prepared by different solvents.

Sample	DSC	TGA	
	T_g (°C)	T_{d5} (°C)	residue (%)
PEF - GVL	82	306	10.8
PEF - PC	53	253	10.9
PEF - Cyrene	74	272	10.1
PEF - NMP	77	284	10.5

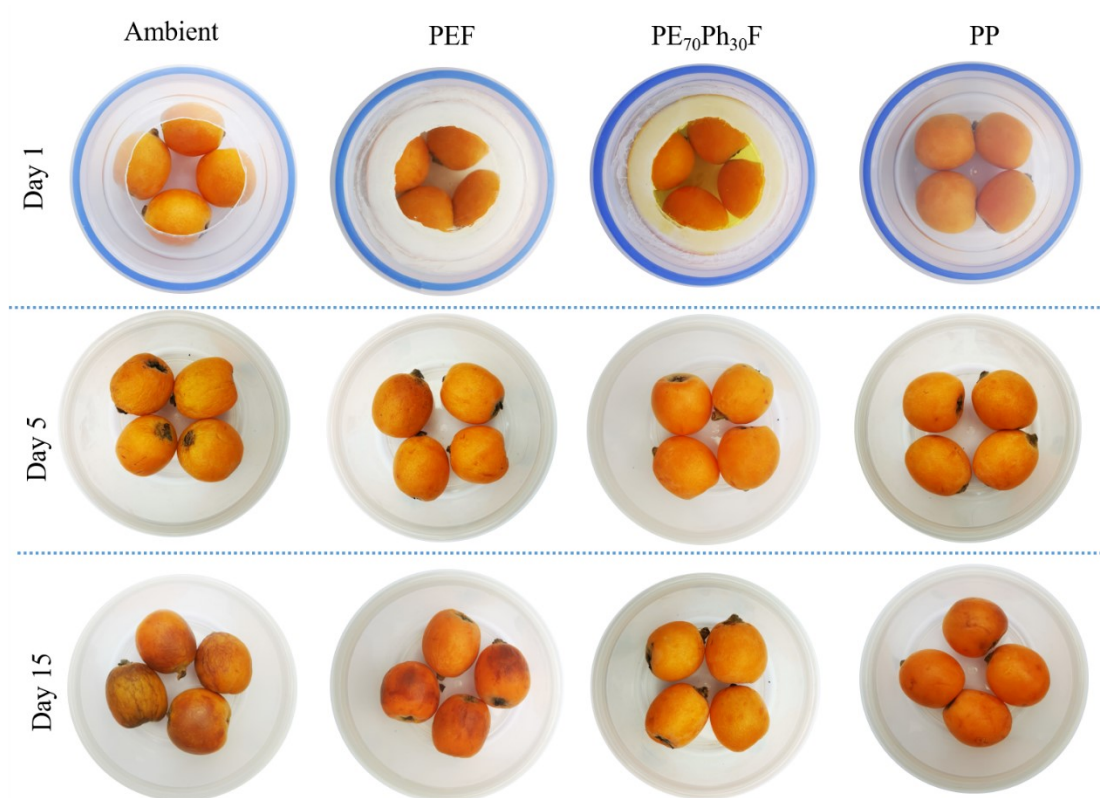


Figure S2. Photographs of ambient (unpackaged) and packaged loquats stored at room temperature after 1 day, 5 days and 15 days.

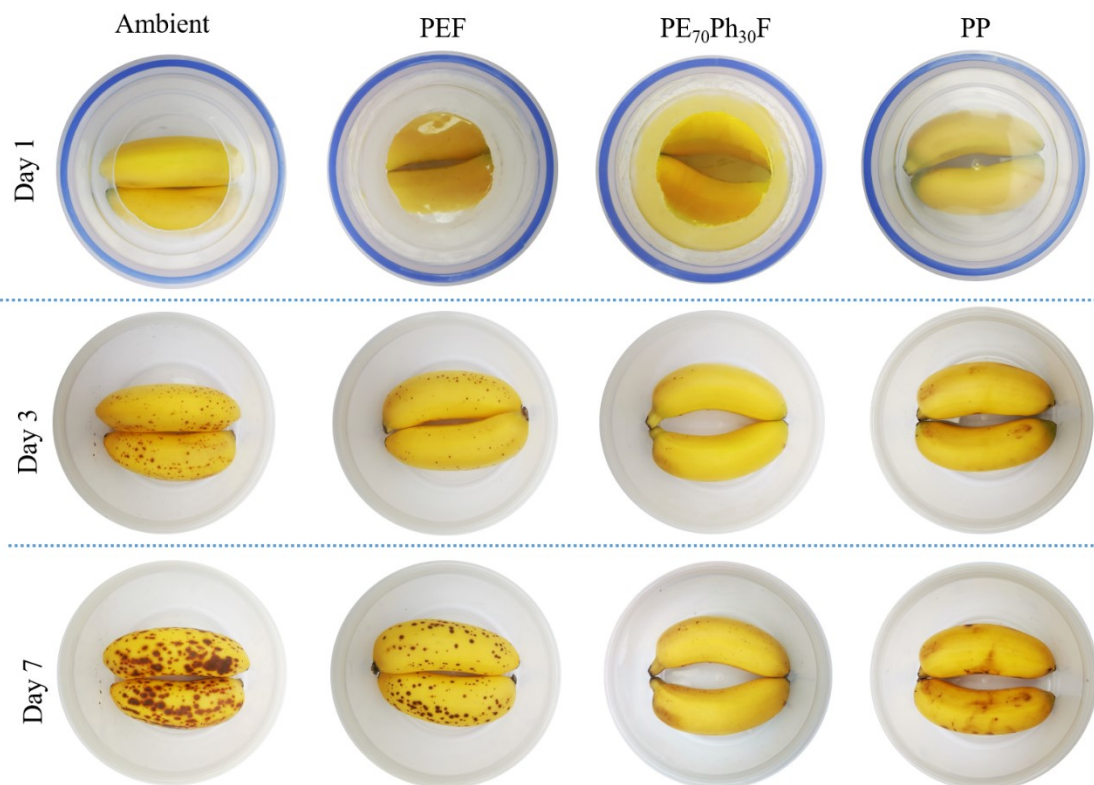


Figure S3. Photographs of ambient (unpackaged) and packaged bananas stored at room temperature after 1 day, 3 days and 7 days.