Electronic Supplementary Material (ESI) for Green Chemistry.

Table S1. Summary of PET depolymerization methods including reaction conditions, formed monomers, yields, and catalysts used.

Study	Year	Method	Code Method	Reaction temperature (°C)	Reaction pressure	Reaction time (min)	Product	Degradation yield	Product yield	Catalyst
B. Liu[186]	2018	Metal salts and organocatalysts-assisted glycolysis	MSG	190	Atm	1	BHET	100,0%	83,0%	Zn(OAC)2
S. Nica[236]	2018	Catalyzed aminolysis	CA	190	Atm	3	BHETA	100,0%	100,0%	M4HPP
V. Vinitha[205]	2023	Metal salts and organocatalysts-assisted glycolysis	MSG	150	Atm	15	BHETA	90,0%	95,0%	Ag-doped ZnO nanoparticles
X L Wang[169]	2023	Mixed alcoholysis	MA	80		30	Terephthalic acid	95,0%	98,0%	
V. S. Palekar[238]	2012	Catalyzed aminolysis	CA	110	Atm	40	BHETA		89,0%	Hmim.TfO
S. Tang[153]	2022	Cosolvent alcoholysis	CoAL	200		30	DMT	99,0%	91,0%	MgO/NaY
D. S. Achilias[233]	2010	µWave assisted aminolysis	µW AA	250	4 - 10 bar	30	BHETA	100,0%	100,0%	
P. Lozano Martinez[149]	2021	Supercritical Alcoholysis	SCA	275	40 bar	30	TA/DMT/DMT/DET/EG	94,0%	94,0%	
Y. Yang[144]	2001	Supercritical Alcoholysis	SCA	250	11 MPa	40	DMT	95,0%	95,0%	
R. López-Fonseca[189]	2011	Metal salts and organocatalysts-assisted glycolysis	MSG	196	Atm	60	BHET		80,0%	sodium carbonate
H. W. Horn[284]	2012	Amidation / Transesterification	AT	110	Atm	120	BAETA		89,0%	1,5,7-triazabicyclododecene (TBD)
R. M. Musale[237]	2016	Catalyzed aminolysis	CA	170	Atm	90	BHETA		97,0%	Choline chloride. 2 ZnCl2
Y. Yang[150]	2023	Supercritical Alcoholysis	SCA	270	8 Mpa	60	DET		92,0%	ZnO/Al2O3
L. R. Zhang[84]	2013	Neutral hydrolysis	NH	145		120	TPA	100,0%	93,0%	$[(CH_3)_3N(C_{16}H_{33})]_3PW_{12}O_{40}$
S. Mishra[90]	2003	Acidic Hydrolysis	ACH	120	Atm	140	TPA	87,0%	87,0%	HNO3
S. Kumagai[117]	2018	Alkaline Hydrolysis	ALH	180		120	TPA	100,0%	100,0%	NaOH
S. Lalhmangaihzuala[286]	2020	Metal salts and organocatalysts-assisted glycolysis	MSG	190	Atm	90	BHET		79,0%	orange peel ash
D. Stanica-Ezeanu[81]	2021	Neutral hydrolysis	NH	205	3-3.3 MPa	120	TA ou TPA ou TGA	87,5%	96,0%	marine water
L. Liu[82]	2005	Neutral hydrolysis	NH	220	15-20 bar	120	TA ou TPA ou TGA	100,0%	100,0%	
F. Quartinello[262]	2017	Mixed chemical/enzymatic hydrolysis	MCEH	250	40 bars	90			85,0%	
M. Imran[201]	2011	Metal salts and organocatalysts-assisted glycolysis	MSG	300	1,1 Mpa	80	BHET		90,0%	Mn3O4/Silica nanoparticules
D. Lei[192]	2022	Metal salts and organocatalysts-assisted glycolysis	MSG	220		90	BHET	92,5%	70,4%	$SnCl_2$
L. Liu[199]	2022	Ionic liquid-based catalysts-assisted glycolysis	ILG	193,5		125	BHET	100,0%	84,5%	[Ch][Gly]
Z. Guo[206]	2018	Heterogeneous catalysts-assisted glycolysis	HCG	240		120	BHET		82,0%	Perkalite F100®
Y. Peng[98]	2023	Acidic Hydrolysis	ACH	280		120	TPA + EG diacetate		94,0%	AcOH
B. Yan[136]	2023	Alkaline Hydrolysis	ALH	150		240	TPA	100,0%	100,0%	K2CO3 / Banana peel extract
Z. Chen[191]	2023	Metal salts and organocatalysts-assisted glycolysis	MSG	250		150	BHET	89,2%	99,7%	K_2CO_3
S.L. Fávaro[267]	2012	Supercritical Alcoholysis	SCA	255	11,65 Mpa	120	DET		80,0%	
W Yang[79]	2021	Neutral hydrolysis	NH	220		180	TPA	100,0%	95,0%	TPA
T. Yoshioka[92]	1994	Acidic Hydrolysis	ACH	150		300	TPA	96,0%	95,0%	H2SO4
Y. S. Parab[241]	2012	Catalyzed aminolysis	CA	170	Atm	240	BHETA		86,0%	beta zeolite or montmorillonite KSF
V. Tournier[261]	2020	PET engineered enzyme hydrolysis	EH	72	Atm	600	TPA		90,0%	computer aided modified LCC
N. G. Bush[198]	2023	Ionic liquid-based catalysts-assisted glycolysis	ILG	180		240	BHET	100,0%	50,0%	$GdCl_3$ $6H_2O$/[emim]OAc
S. R. Shukla[231]	2006	Catalyzed aminolysis	CA	170	Atm	480	BHETA		91,0%	Na acetate
S. Liu[156,157]	2013	Ionic liquid-based catalysts-assisted alcoholysis	ILA	205	Atm	480	DBTP	100,0%	95,0%	Bronsted–Lewis acidic ionic liquid
A. Peterson[115]	2022	Alkaline Hydrolysis	ALH	90	Atm	1000	TPA	100,0%	80,0%	NaOH
P. McKeown[164]	2020	Cosolvent alcoholysis	CoAL	100		960	DMT		72,0%	$[NMe_4]^+[OCO_2Me]^-$
C. N. Onwucha[75]	2023	Neutral hydrolysis	NH	200		1440	TPA		98,0%	