Supplementary Materials

Emerging applications of deep eutectic solvents in the preparation and functionalization of biomass-derived carbonaceous materials: Challenges and prospects

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Table S1 Selected examples for the applications of DESs in the preparation and functionalization of BCMs.

Roles of DESs	Preparation/functionalization routes	Biomass source	As-obtained BCMs	Applications of BCMs	Performances	Ref.
STC media	STC of ChCl-EG-glucose DES with $Al(NO_3)_3$	Glucose	$AlOOH/Al(OH)_3$ functionalized solvothermal carbon (Al-STC)	Cr(VI) removal	99.9% removal by filtration	[1]
				Malachite green removal	99.9% removal by filtration	
				Methylene blue removal	99.9% removal by filtration	
				Ciprofloxacin removal	99.9% removal by filtration	
				Oxytocin removal	88.8% removal by filtration	
				CTAB removal	99.9% removal by filtration	
	STC of biomass in ChCl-CA DES	Corn straw	Carboxyl and phenol groups co-enriched solvothermal carbon	U(VI) adsorption	Q_m =353 mg/g, 25 °C, 1 g/L	[2]
	STC of biomass in DES	Wood	Solvothermal carbon	Cr(VI) adsorption	Q_m = 270 mg/g	[3]
	STC of ChCl-EG-glucose DES with $FeSO_4$	Glucose	Fe-doped oxygenated solvothermal carbon	Malachite green adsorption	Qm = 690 mg/g	[4]
	STC of biomass in ChCl-H2O-$FeCl_3$ DES	Garden waste	Solvothermal carbon	Methylene blue adsorption	Q_m = 148 mg/g	[5]
	Solvothermal carbon synthesized in DES was further modified by activation and doping of Mn_xO_y in DES- and $KMnO_4$-containing solution	Parthenium hysterophorus leaf	Mn_xO_y-doped porous carbon	Methylene blue adsorption	99.68% removal by filtration	[6]
Co-pyrolysis	Pyrolysis of biomass with ChCl-urea DES and H_3PO_4	Palm shell	Nitrogen-doped porous carbon	Pb adsorption	97 mg/g	[7]
	Pyrolysis of biomass with $FeCl_3$-urea DES	Peanut shell	Nitrogen-doped magnetic biocarbon	Cr(VI) adsorption	Q_m = 133 mg/g, 25°C	[8]
	Successive microwave heating and pyrolysis of glucose-urea DES	Glucose	Nitrogen-doped porous carbon	Methylene blue adsorption	Q_m = 440 mg/g	[9]
				4-nitrophenol adsorption	Q_m = 487 mg/g	
	Pyrolysis of biomass with ChCl-glycolic acid DES	Pumpkin seed shell	Porous carbon	Doxycycline hydrochloride adsorption	Q_m = 30.35 mg/g	[10]

	Pyrolysis of the Immersion of biochar with ChCl-urea	*Boehmeria nivea (L.) Gaud*.	Fibrils separation and nitrogen-doped biochar	Tetracycline adsorption	k_{obs} =0.0221min^{-1}, PDS (1 mM), 25 °C, TC (20 mg/L)	11
				Escherichia coli inactivation	inactivation efficiencies 5.19-log decline	
Post-modification	Impregnation magnetic biocarbon with ChCl-glycerol DES	Pamelo peels	DES-modified magnetic biocarbon	Methcathinone adsorption	Q_m = 1.4 mg/g	12
	Impregnation active carbon with ChOH-urea/glycerol	Palm shell	DES-modified active carbon	CO_2 adsorption	Q_m =37.2 mg/g, 25 °C, 200 mL/min, CO_2(10%)	13
	Impregnation of kaolin-biocarbon composite with hexadecyltrimethylammonium Bromide (CTAB)-glycerol DES	Vitex doniana residue	DES-modified kaolin-biocarbon composite	Acid blue adsorption	Q_m was increased from 35 to 499 mg/g	14
				Ciprofloxacin adsorption	Q_m was increased from 21 to 158 mg/g	
				Acetaminophen adsorption	Q_m was increased from 4 to 133 mg/g	
	Loading of 1-ethyl-3-methylimidazole chloride ([emim]Cl) - imidazole DES into nanofibrous carbon microspheres by physical dispersion	Chitin	DES-loaded Nanofibrous carbon microspheres	SO_2 adsorption	14.66 mol/kg, 25 °C, 1 bar	15

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