

INDEX

- activated carbon, 22, 28–29, 40,
71, 74, 77, 101
- column, 235
- KOH, 84
- spray, 235
- wood pallet, 79
- adsorbent
 - activated carbon, 67
 - biochar, 14
 - biomass sources, 13
 - biosorbent, 7
 - carbon-based, 16–17, 21, 66
 - graphene, 13, 29–30
 - in pharmaceutical
 - compound, 10
 - metal-organic, 36
 - pore size, 17, 76
 - pristine, 13
 - properties, 17, 25, 31
 - propoerties, 21
 - sources, 7
 - spent cofee waste, 11
- adsorption, 5, 8
 - application, 38
 - capacity, 41
 - efficiency, 15
 - performance, 13, 15, 23, 34
 - process, 28, 37
 - removal, 7, 27
- agriculture, 59, 118–20
- antibiotics, 2
- biomaterial
 - disposal, 7
 - waste, 69
- biosorbents, 8, 21, 29, 41
 - algae, 10
 - treated, 10
- bricks, 196–97, 208–09
 - conventional, 213
 - plastic, 212–13, 215
 - properties, 211
- chemical compound
 - conversion, 10
- CO₂ capture, 63–64
- CO₂ conversion, 148, 160, 182
- CO₂ hydrogenation, 167
- CO₂-to-methanol, 150, 162,
179
- construction, 196–97, 201
- conversion, 182, 237

- biosolid, 129
 - catalytic, 149
 - energy, 126, 244
 - methanol, 158, 170
- conversion
 - mechanism, 74
 - parameters, 17
- Cu-catalyst, 150, 152
- environmental regulations, 235
- graphene
 - structural, 33
 - oxide, 31, 34
- greenhouse gas emissions, 124, 128, 145, 231, 240, 249, 252
- healthcare expenditure, 1
- human population, 1
- incineration, 201, 212, 232, 238, 244
- landfills, 129, 196, 203–04, 230, 245
- medicine
 - expenses, 1
 - supply, 1
 - unabsorbent, 2
- methanol, 147
 - formation, 158
 - production, 148–49, 154, 165
 - yield, 153
- municipal solid waste, 229, 233, 249
- nutrient, 119
 - contamination, 127
 - content, 121
 - demands, 124
 - pollutant, 121
 - pollution, 131
 - recovery, 128–29
 - recycling, 124, 126
 - runoff, 125, 127, 131
- pharmaceutical, 22
 - adsorbent, 38
 - adsorption, 37, 42–43
 - blister, 201
 - compound, 7, 34
 - drug, 9
 - in wastewater, 4
 - pollutant, 4, 11, 27
 - removal technique, 5
 - residual, 14
 - sludge, 20
- plastic trash, 207–08, 246
- plastic waste, 195–96, 198, 208, 229, 232, 237
 - bricks, 217
 - conversion, 196
 - management, 199, 205, 231, 235, 253
- renewable material, 70, 74

- thermal
 - conversion, 14
- waste
 - agriculture, 8
 - residential, 8
 - management, 126, 129, 135, 196, 207, 212, 254
 - streams, 130, 252
- waste-to-energy, 237, 243, 249, 251
- wastewater, 4, 38, 42
 - cleaning, 5
 - conditions, 11
 - contamination, 4
 - fertiliser, 133, 136
 - management, 120, 122
 - nutrient-rich, 126, 129
 - pollution, 128
 - sources, 123
 - treatment, 118, 122
 - untreated, 118, 121