

INDEX

- activated carbon, 96, 117
- adsorption, 104, 108, 114, 117, 119, 123
- AEE *see* aqueous enzymatic extraction
- AG *see* andrographolide
- andrographolide, 40–42, 51
- anti-inflammation, 41, 51
- antioxidant, 56, 58
 - capacity, 71
 - potential, 71
- antiviral, 41, 51
- AOE *see* aqueous oil extraction
- aqueous enzymatic extraction, 83
- aqueous oil extraction, 83

- bioactive compounds, 22, 26, 35–36
- biochar, 114, 117–19, 128–29
- biochemical conversion, 5, 10
- biocompatibility, 130
- biomass valorization, 1, 3, 7–10, 12, 14–15

- carbon-rich materials, 96

- chemical
 - coagulation and flocculation, 116
 - crosslinking, 44
- circular
 - bioeconomy, 8
 - economy, 1, 13–14
- CPO *see* crude palm oil
- crayfish shell biochar, 115, 117, 119–21, 127–30
- crosslinking, 43, 44
- crude palm oil extraction, 82–83

- dye pollution, 114

- electrochemical properties, 129
- environmental sustainability, 22
- esterification-condensation, 46

- formaldehyde, 95–96
- freeze-drying, 64
- freeze-thaw, 44
- FT *see* freeze-thaw
- functional group, 121, 125

- gelatin, 43
- green solvents, 12

- hydrogel, 42–45, 49, 51
- hydrothermal carbonization, 6
- hydroxyl, 43, 46

- MAE *see* microwave-assisted extraction
- mechanism, 107, 121, 127
- membrane filtration, 114, 116
- methyl violet, 113, 121
- microwave-assisted extraction, 23–24

- Orthosiphon stamineus*, 22, 26, 28
- oxidation, 116
- oxidative stress, 56, 58–59

- palm oil, 79
- phenolic compounds, 57, 61, 63, 68
- physical crosslinking, 44, 45, 51
- physicochemical properties, 46
- phytochemicals, 58
- polyvinyl alcohol, 43–44
- porous structure, 120
- PVA *see* polyvinyl alcohol
- pyrolysis process, 119

- reusability, 109

- screw press, 81
- screw pressing, 80

- SC-CO₂ *see* supercritical carbon dioxide
- SE *see* solvent extraction
- soil degradation, 128
- solvent extraction, 82
- structural characteristic, 124
- subcritical water extraction, 4, 57, 60–64, 68, 84, 87, 89
- supercapacitors, 129
- supercritical carbon dioxide, 32–33, 35
- supercritical fluid extraction, 4, 11, 14, 60
- SWE *see* subcritical water extraction

- therapeutic, 22–23, 40
- thermochemical processing, 3, 6

- UAE *see* ultrasound-assisted extraction
- ultrasound-assisted extraction, 28–29, 31

- wastewater treatment, 109
- water, 62, 84, 113
 - pollution, 115
 - treatment, 114
- wound healing, 39–40