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Essential Oils: Recent Advances in Extraction Processes, Fundamental Modeling, Chemical Analysis, and Applications

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Message from the Guest Editors

Dear Colleagues,

The recent advances in conventional and traditional processes of essential oils (EO) extraction such as hydrodistillation, steam-distillation, hydro-diffusion, solvent, enfleurage, etc., have been recently used under various intensified routes (ultra-sound-assisted hydrodistillation, ohmic heating-assisted hydrodistillation, DIC, etc.). Other innovative and new processes have been studied and developed on an industrial scale. They have required fundamental analysis of physical transfer phenomena to use sub or supercritical-fluid extraction, microwave-assisted extraction, ultrasound-assisted extraction, DIC extraction, DIC-expansion-assisted hydrodistillation and steam-distillation, DIC-autovaporization, and MFA extraction. Specific advances in assessment by chromatography (SPME-GC, GC-FID, GC-MS, GC-MS/MS, etc.) were obtained. Studies, also, have included the impact of variability in varieties, environmental conditions, harvesting periods, etc. Therefore, one of the major emerging aspects in essential oil extraction from several plants has been to perform multi-valorization by extracting several non-volatile bioactive compounds such as antioxidants, etc.



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Special Issue



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