

# Chemical Engineering Communications

## Extraction of *Siphonochilus aethiopicus* Essential Oil by Steam Distillation

Mpho Sandra Malaka<sup>1</sup>, kersch Naidoo<sup>2</sup>, and John kabuba<sup>3</sup>

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<sup>1</sup>*Department of Chemical, Metallurgical and Materials Engineering, Tshwane University of Technology, Pretoria, South Africa*

<sup>2</sup>*Biosciences, Council for Scientific and Industrial Research, Pretoria, South Africa*

<sup>3</sup>*Department of Chemical Engineering, Vaal University of Technology, Vanderbijlpark, South Africa*

### Abstract

*Siphonochilus aethiopicus* is an indigenous South African plant also known as African ginger. It has often been used for its medicinal properties to treat various ailments such as flu, colds, and so forth. The research aim of this study was to optimize the process parameters of steam distillation for the extraction of oil from African ginger rhizomes. This technology is the oldest and well known for extracting essential oils due to its economic viability and the higher final oil purity. The effects of operating parameters such as extraction duration, moisture content, particle size, and temperatures between 80°C and 100°C were studied for maximum oil recovery. The oil recovery of 0.61%(w/w) was achieved after 270 min of extraction time, using 6.37%(dry) moisture content of particle size 2.4 mm 4 mm at a maximum temperature of 100°C. Fick's first law was used to mathematically model the experimental data of this study.