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NANYANG TECHNOLOGICAL UNIVERSITY

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URECA
*U*ndergraduate *R*esearch *E*xperience on *CA*mpus

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# Brain activity study on olfactory stimulation via Electroencephalography

## Introduction

•Electroencephalography (EEG) is the recording of electrical signals generated by the brain.

•EEG had been used for past diagnostic application in neurology.

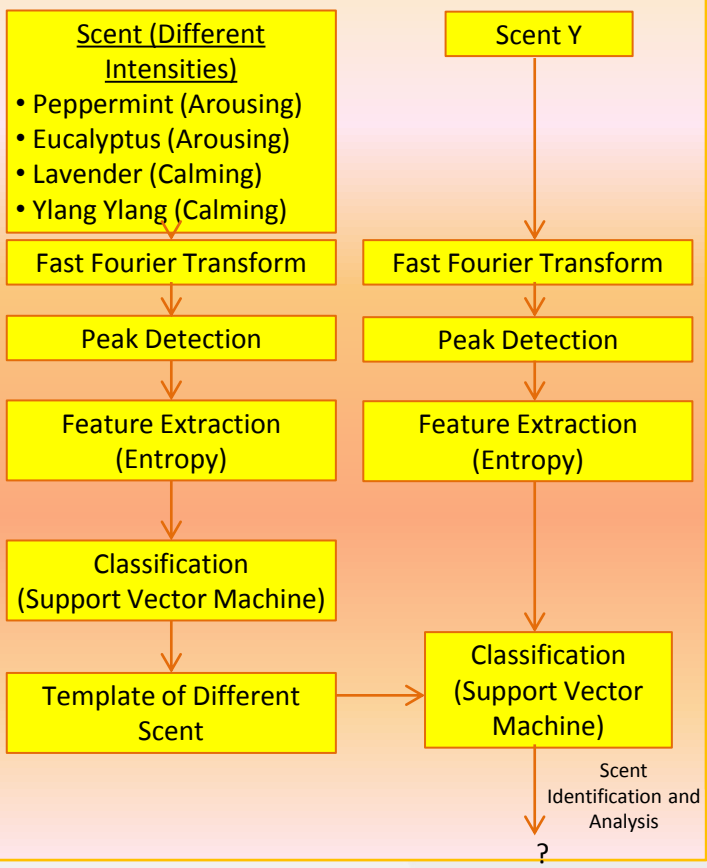
• EEG proves to be a important instrument in research, especially when higher temporal resolution is needed.

## Objective

• To investigate the steady state behavior of the brain to arousing and calming odours at different intensities by using EEG

• To identify and analyze different odours using EEG

## Algorithms




## Preliminary Results

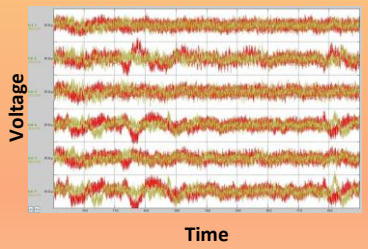
• Experiment were conducted for 2 scents, lavender and ylang ylang at two intensities.

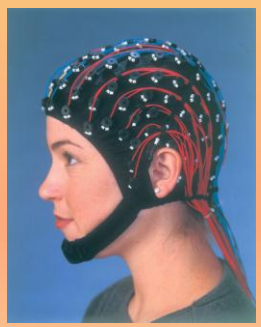
• Red signals represent the higher scent intensity while yellow signals represent the lower scent intensity.

• Channel used were Ground: FPz; POz, Reference Cz, Channel 1: C3, Channel 2: Oz, Channel 3: C4, Channel 4: Fz, Channel 5: P3, Channel 7: F3

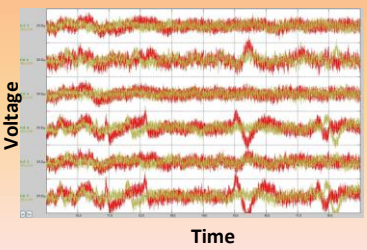
• The 2 graphs below show that higher scent intensities have greater impact on brain signals.

lavender



Ylang Ylang




g. USBamp

## Potential Applications

• To invigorate workers using arousing or calming scent at appropriate intensity

• To identify and classify scent into different types by using EEG