SA Grape and Wine research Institute

Programme/Project Info for

Prospective MSc and PhD Students

# Programme: Spectroscopic applications in grape and wine sciences

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| Towards non-destructive analytical methods for process monitoring and quality control in viticulture, oenology and wine biotechnology | The analytical technologies used are near- and mid-infrared spectroscopy coupled with multivariate data analysis tools. Applications, mostly in the form of classification and regression models, using multivariate classification and calibration algorithms, are developed and transferred to industry. Infrared spectra are coupled to flavour chemistry (using mass spectrometry and chromatography) and sensory data on same samples for multi-block analysis. An important application area of infrared spectroscopy is multi-scale quality monitoring of table grapes – in the vineyard, at the packhouse and during cold storage. In another application the combination of spectroscopy, chemometrics and process control strategies can be used to implement process engineering solutions during wine fermentations. |

# OpPortunities for 2021

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| 1. Early evaluation of the effectiveness of winemaking practices from red wine IR grape measurements | * + Jose Luis Aleixandre, Wessel du Toit,   + A MSc bursary for agriculture and **engineering** students   + To discuss project: Jose Luis Aleixandre [joaltu@sun.ac.za](mailto:joaltu@sun.ac.za) ; tel 021 808 9238 |

# general Contact information

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| To apply: | Lorette de Villiers ; [lorette@sun.ac.za](mailto:lorette@sun.ac.za); tel 021 808 3770 |
| Bursary: | [Postgradfunding@sun.ac.za](mailto:Postgradfunding@sun.ac.za);tel 021-808 4208 |
| Website | [http://www.sun.ac.za/english/faculty/agri/viticulture-oenology](http://www.sun.ac.za/english/faculty/agri/viticulture-oenology/) |