TITLE: Development of an FTIR Spectroscopy Chemometrics Quantitative Analysis

INSTITUTION: Nufarm Australia Limited, 103-105 Pipe Road, Laverton North, VIC, Australia 3026

SUPERVISOR NAME: Claudio Silva, Analytical Development Manager

RESEARCH FOCUS: Analytical Chemistry

LABORATORY NAME: Laverton R&D and QC laboratories

RESEARCH BACKGROUND:

The R&D and the QC department of Nufarm Australia Ltd. have been utilising the technique of FTIR (Fourier Transform Infra-Red) spectroscopy for the characterisation of raw materials used in formulation development and in manufacturing. FTIR, a technique used to obtain an infra-red spectrum of absorption, emission, photoconductivity or Raman scattering of a solid, liquid or gas, has proven to be a useful technique for the fast screening of materials. Recently the group have been developing quantitative methods using statistical analysis, Chemometrics. Other things the R&D and the QC department does includes analytical chemistry, and chemical management.

RESEARCH PROJECT PROPOSAL:

The successful applicant/s will be inducted onto the site and into the Nufarm R&D laboratory, and then will be provided with an overview of the work carried out within the laboratory. The student/s will then be provided with training into the use and theory of FTIR spectroscopy, and will carry out FTIR scanning of samples of active (herbicide, insecticide and fungicide) materials. The student/s will also be required to carry out primary analysis of these samples, including; HPLC assays, density and pH measurements. The Analytical Development Manager and Production Chemists will be available to provide support to the student/s to ensure they work to Nufarm’s HS&E standards.

NUMBER OF STUDENTS: One or two

PLACEMENT:

The ideal student will have an enthusiasm for research, and be studying in the areas of science and chemistry. An interest in FTIR spectroscopy is preferred. This placement will be undertaken at the Nufarm building in Laverton, on a full-time basis, or part-time as negotiated before placement begins (maximum total placement time of 80 hours). Applications are due by October 4th, 2016. Placement start time is negotiable (most likely after the semester two exams), on a strictly volunteer basis, and successful completion of this placement opportunity confers eligibility for the Monash CC-INV1000 accreditation.
Science Industry Placement Program Application Form

For more information visit [http://www.monash.edu/science/current-students/industry-placements-and-career-support](http://www.monash.edu/science/current-students/industry-placements-and-career-support)

All applications to be lodged in electronic form only, emailed to sci-sipp@monash.edu

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**Personal details - Please type or write legibly**

- **Student ID number**
- **Surname**
- **Given Names**
- **Date of Birth**
- **Postal Address for correspondence**
- **Student email address**
- **Home Phone number**
- **Mobile number**

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**Course details**

- **Course Name**
- **Course Code**
- **Major**
- **Minor**
- **Course Start Date**
- **Current Year of Study**
- **Expected completion date**

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**Project details**

- **Industry partner name**: Nufarm Australia Limited
- **Project title**: Development of an FTIR Spectroscopy Chemometrics Quantitative Analysis
- **Dates available**: e.g. 6 January – 6 March 2016
- **Working hours available**: e.g. 9 am – 5 pm daily

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**Meeting placement requirements**

What units have you completed that will make you a suitable candidate for the project?

What attributes do you have that will make you a suitable candidate for the project?

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Version date: 14 January 2016
Supporting documentation (please attach following documents with your application and tick box below)

- Curriculum Vitae of no more than 3 pages.
- Statement of results (download from WES—official versions are not necessary).

Eligibility

Eligibility Criteria
To be selected for the Science Industry Placement Program, you need to meet the following criteria:

- Be currently enrolled in a Faculty of Science course, must have completed at least 48 credit points and have no more than 48 credit points remaining in the course; and
- Demonstrate a preparedness and capacity to complete a minimum of 30 hours or a maximum of 80 hours placement at an industry partner organisation without compromising their other science studies; and
- Demonstrate work readiness (i.e. we are looking for evidence of personal qualities which equip you to function appropriately and autonomously in a professional work environment).

Selection Criteria
The selection criteria are the ‘best fit’ match between your enrolled course, units you have completed, interest and experience with the particular project requirements. The industry partner has the final decision. Applicants who are closer to completing their course will be given priority if they meet the ‘best fit’ match. Please visit the projects section to view the projects available. The webpage will be updated as project proposals are submitted by the industry partners.

Privacy

The information on this form is collected for the primary purpose of applying for the Science Industry Placement Program which includes deciding whether the application will be granted and sending related correspondence. If the form is incomplete, it may not be possible for the Faculty to process the application. The information provided by the applicant in this form, curriculum vitae and academic may be provided to the industry partner of the project in the event that the student is provisionally matched with that industry partner in order for the industry partner to assess the application.

All information for the application of the Science Industry Placement Program is managed in accordance to the University’s Privacy Policy. If you wish to access or inquire about the handling of your personal information contact the University Privacy Officer: PrivacyOfficer@adm.monash.edu.au
Applicant’s Declaration

I am enrolled in a course belonging to the Faculty of Science and have completed at least 48 credit points and will have no more than 48 credit points remaining to complete

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I can commit to completion of a minimum of 30 hours or a maximum of 80 hours as required by the industry partner without compromising my studies

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I have addressed the selection criteria including my suitability and match to the agency/ies and the project/s offered by those agencies in my cover letter

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I understand that no salary will be paid for the industry placement and Monash University holds no responsibility for any allowance agreement between the industry partner and the student.

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<th>YES / NO</th>
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On signing the Science Industry Placement Program application form I agree:

1) That I meet all of the eligibility criteria for the Science Industry Placement Program.

2) To represent Monash University in a manner that does not compromise the integrity, reputation or relationship of the University and Faculty with the participating industry partners in any way.

3) That information provided by me in this form, my curriculum vitae and academic transcript may be provided to the industry partner in the event that I am provisionally matched with that industry partner in order for the industry partner to assess my application.

Student Declaration

I declare that the information provided on this form and the information given to support my application is correct and complete.

I acknowledge that Monash University, Faculty of Science reserves the right to vary or reverse any decision on the basis of incorrect or incomplete information.

Student signature ________________________________ Date ________________

Received by (print) ________________________________ Date ________________