Department of Chemistry

Departmental Seminar:
Analytical Chemistry Month

You are cordially invited to a lecture presented by

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Supervised by Prof Jeremy Allison, Prof Bernard Slippers and Prof Egmont Rohwer

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Date: Friday, 15 July 2022
Time: 10:30 – 11:20
Venue: **Orbital**
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Insect pest pheromones: my story of exploration, elucidation and pest control

Insect pest damage in plantations cause serious economic losses in the South African forestry industry [1]. Development of sustainable pest control methods are essential to ensure usage reduction of insecticides, notorious for non-target effects [2]. Pest pheromones are species-specific naturally produced volatiles that can ensure direct population interference when using their attractive and/ or repulsive blends to manipulate insect behaviour [3]. Many forestry pests are in the Lepidopteran order of insects, and larvae usually the damage the trees [4]. In other studies it has been shown that mass-trapping using pheromones can decrease insecticide use significantly [5,6], and monitoring presence of moths allows the accurate timing of insecticide application against progeny larvae to limit insecticide applications [7]. This presentation will introduce concepts of Chemical Ecology and highlight current research results regarding two defoliating Lepidopteran forestry pests indigenous to South Africa. These pests are the wattle bagworm (*Kotochalia junodi* Heylearts) and Pine Emperor moth (*Nudaurelia clarki* Geertsema).

References

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[3] McDonough, L. M., Aller, W. C. & Knight, A. L. 1992. Performance characteristics of a commercial controlled-release dispenser of sex pheromone for control of codling moth (Cydia pomonella) by mating disruption. Journal of Chemical Ecology, 18, 2177-2189.

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[7] Suckling, D. M., Baker, G., Salehi, L., Woods, B. & Dickens, J. C. 2016. Is the combination of insecticide and mating disruption synergistic or additive in lightbrown apple moth, Epiphyas postvittana? PLOS ONE, 11, e0160710.