WESTERN SYDNEY UNIVERSITY

RESEARCH SUMMARY SLIDE

Dr Anya Salih

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For applied research

We seek partners for projects connecting:

1. **Biomimetics for improved photonics** - solar energy transfer and utilization in bioreactors, 2nd generation greenhouses for high density algal/plant biomass or in artificial light-harvesting antennas, organic solar cells

I offer expertise in biomimetic designs, light distribution analyses, microalgal analyses and selection based on pigment composition; fluorophores with high energy channelling, efficient FRET

2. Improved algal or crop production by genetics or polyploidization with increased stress resilience or nutrient stores

I offer expertise in characterising cellular biomarkers using confocal and lifetime microscopies and spectroscopies

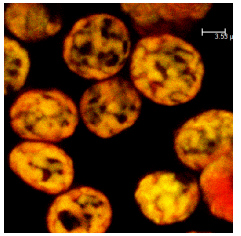
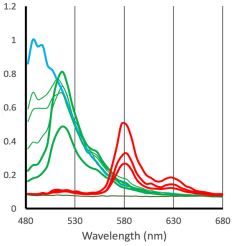
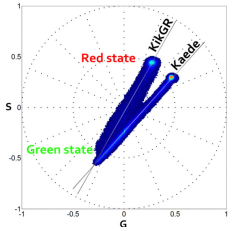
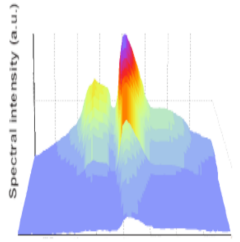
For basic research

I seek partners investigating:

1) Cellular biomarkers of nutrient accumulation & storage in algae and plants; cellular stores as polyP in biology and adaptation
2) Cellular responses of microalgae and plants to climate change stresses; oxidative cellular status; secondary metabolites of plant & algae
3) Improved efficiencies of artificial light-harvesting antennas and organic solar cells

My expertise is in:

(1) Imaging & analysis using 2D, 3D & 4D fluorescence and confocal microscopies & microspectroscopies of autofluorescent molecules in cells & tissues and by fluoro-labels for pH, oxidative stress, lipids, Ca+2, FRET, FLIM

(2) Microstructural biomarkers to identify different forms of nutrient stress and reserves; photobiology and photo-stress responses of coral-algal symbiosis, algae, plants; their optical properties, light optimisation; infra-red microalgae (ChlD, F)

(3) Fluorescent proteins with improved energy channeling capacity, high FRET efficiencies