

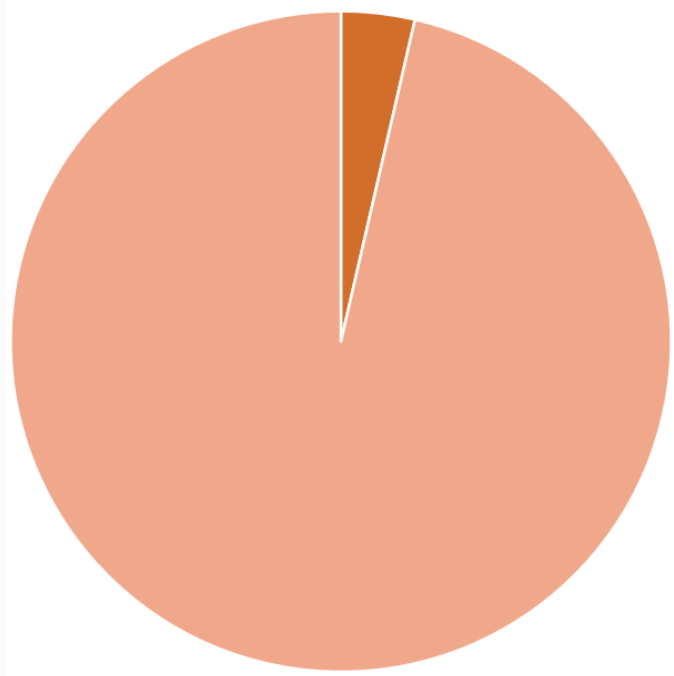
# Monitor Corrosion with Raman

Ariel Bleij<sup>1</sup>, Maria Ponomareva<sup>1,4</sup>, Markus Nadlinger<sup>1</sup>, Gabriela Schimo-Aichhorn<sup>1</sup>, Dieter Bingemann<sup>2</sup>, Cicely Rathmell<sup>2</sup>, Gerald Luckenender<sup>3</sup>, Gerald Haslehner<sup>3</sup>, Paul Gattering<sup>5</sup>, Pierluigi Bilotto<sup>1</sup>, Markus Valtiner<sup>4</sup>

<sup>1</sup>CEST, <sup>2</sup>Wasatch Photonics, <sup>3</sup>voestalpine, <sup>4</sup>TU Wien, <sup>5</sup>Recendt

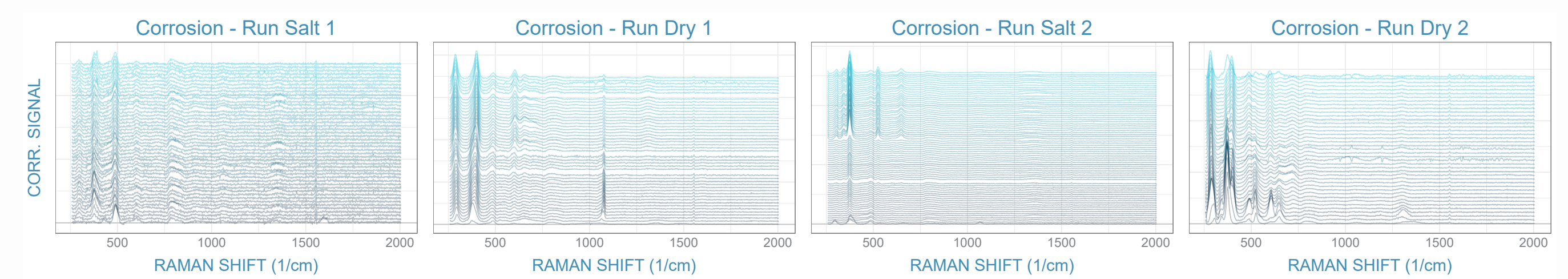
## Motivation

Cost: 3.4% Global GDP

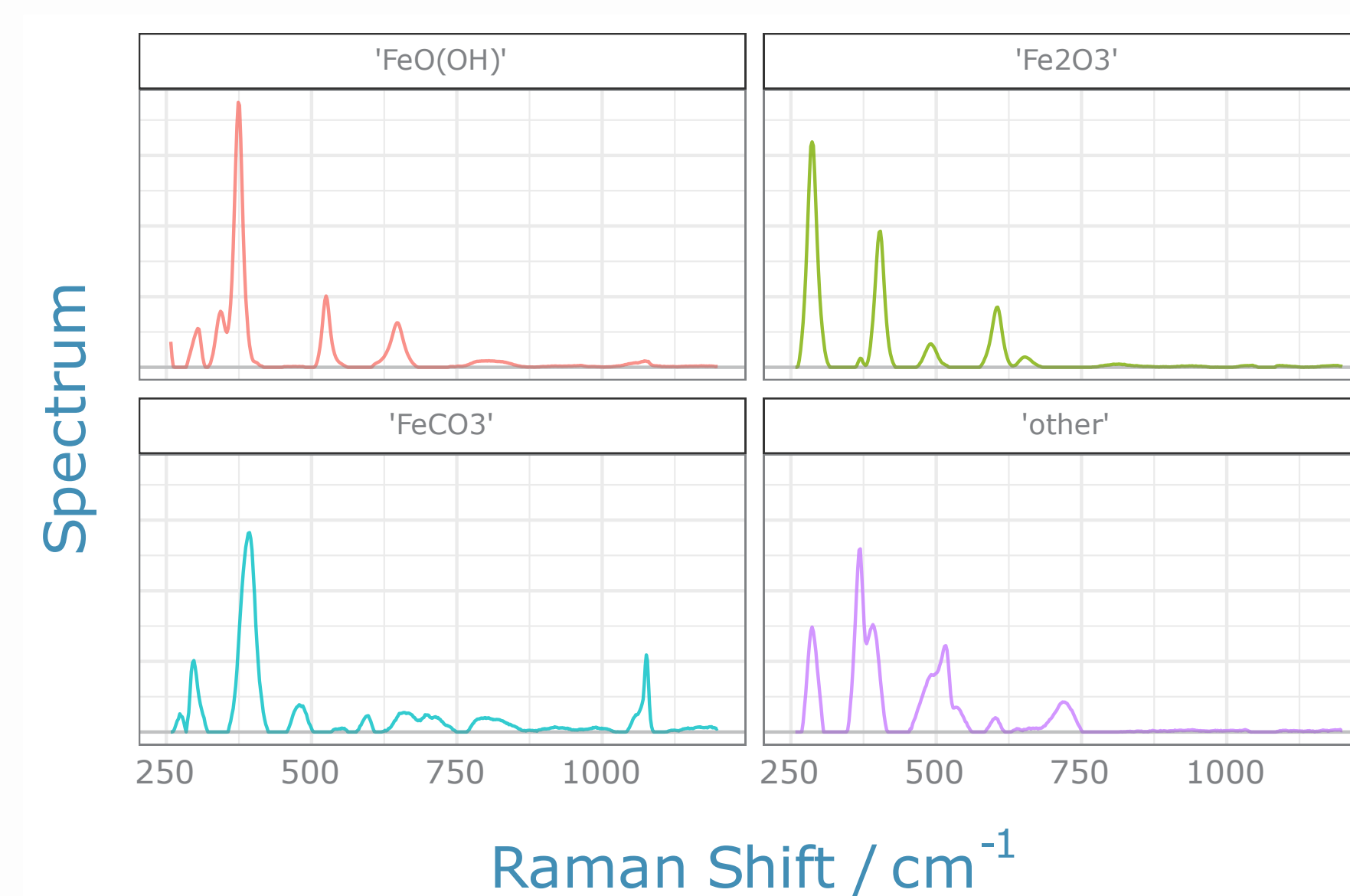


## Analysis and Discussion

### Baseline Corrected Spectra

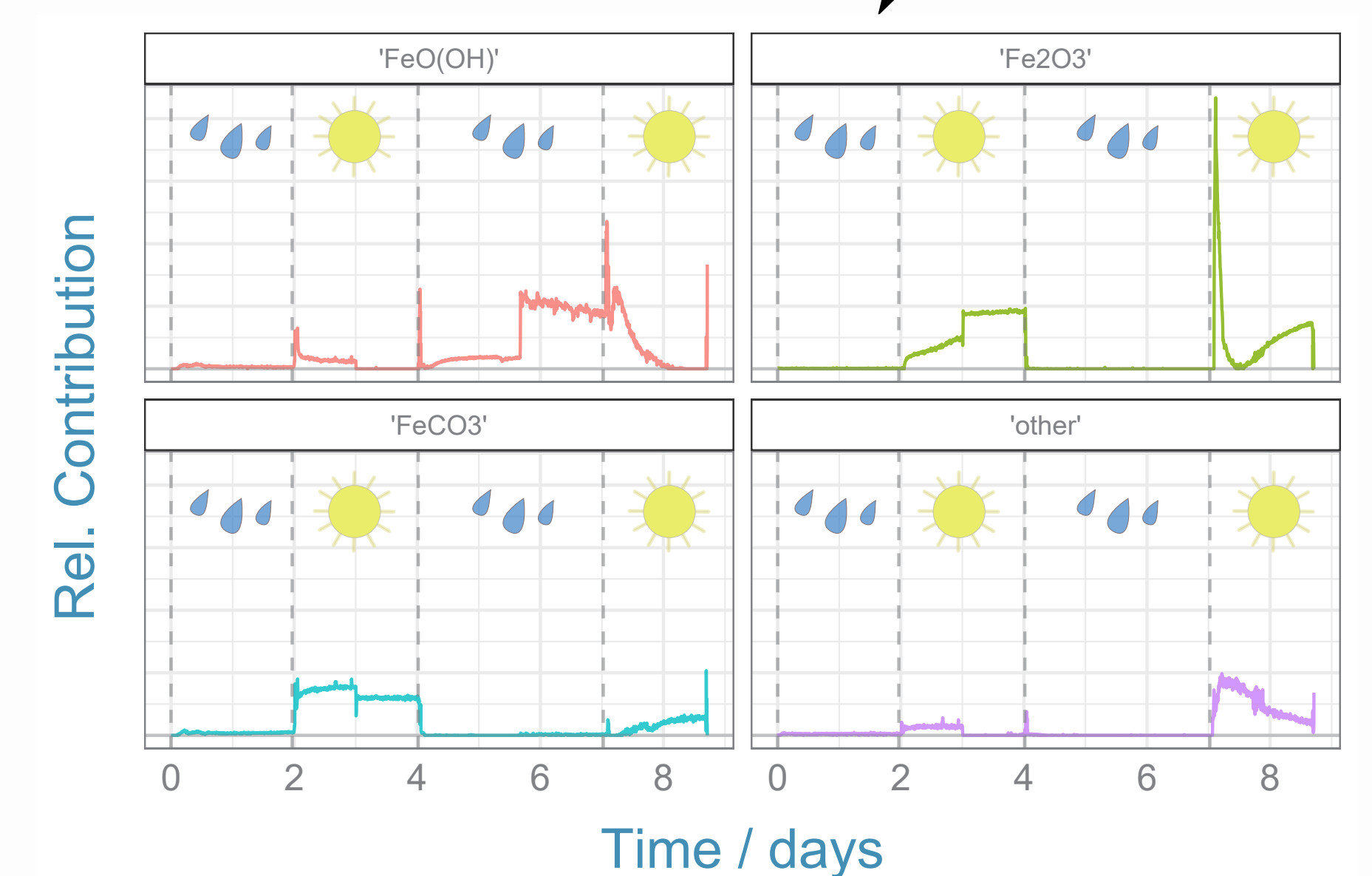


### Species Spectra



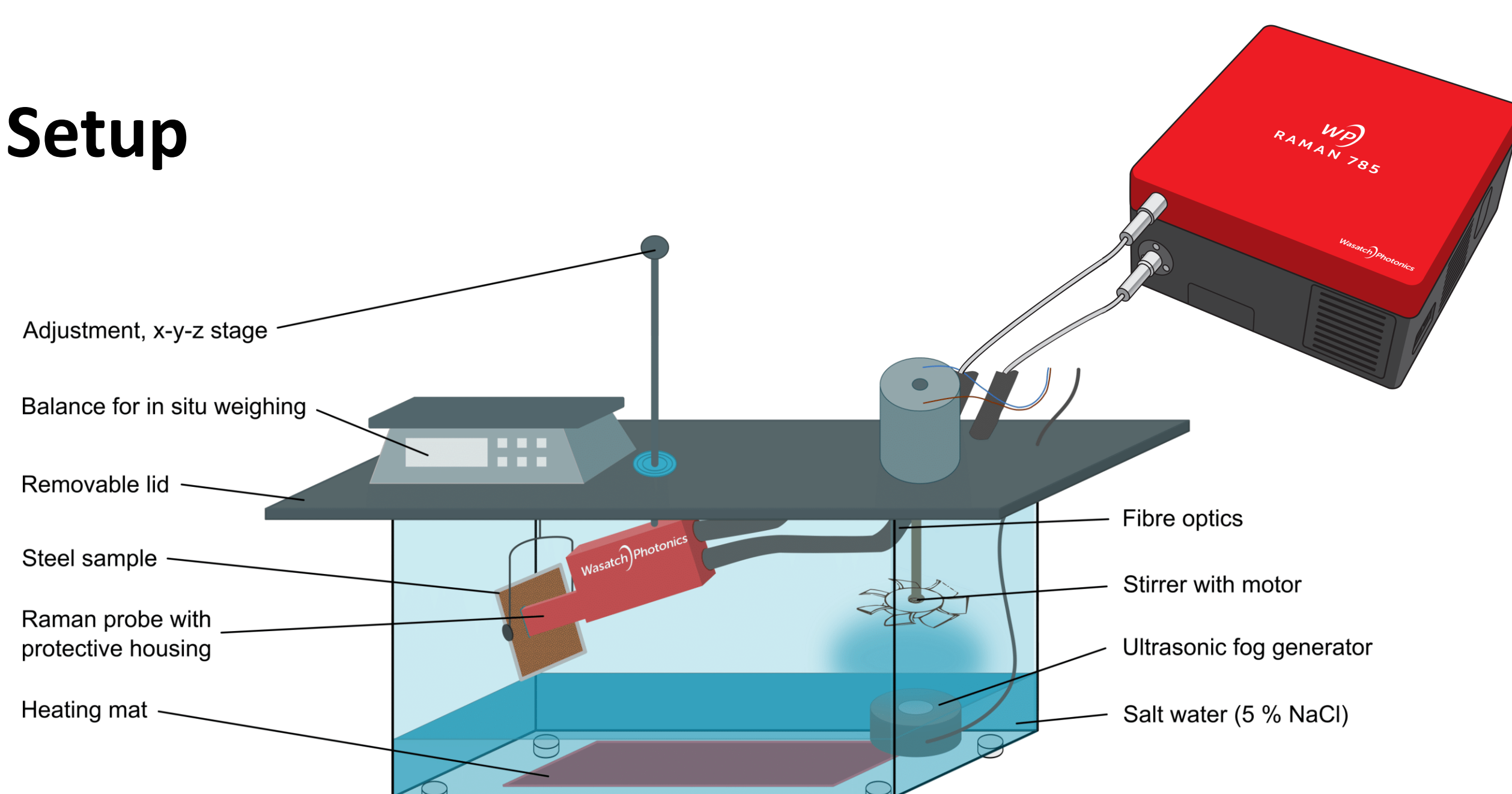
MCR - ALS

Evolution

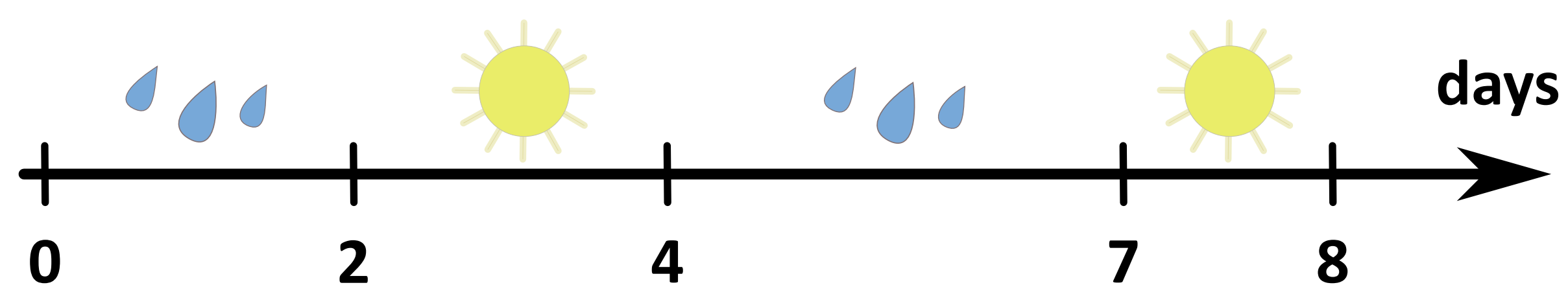


## Experiment and Results

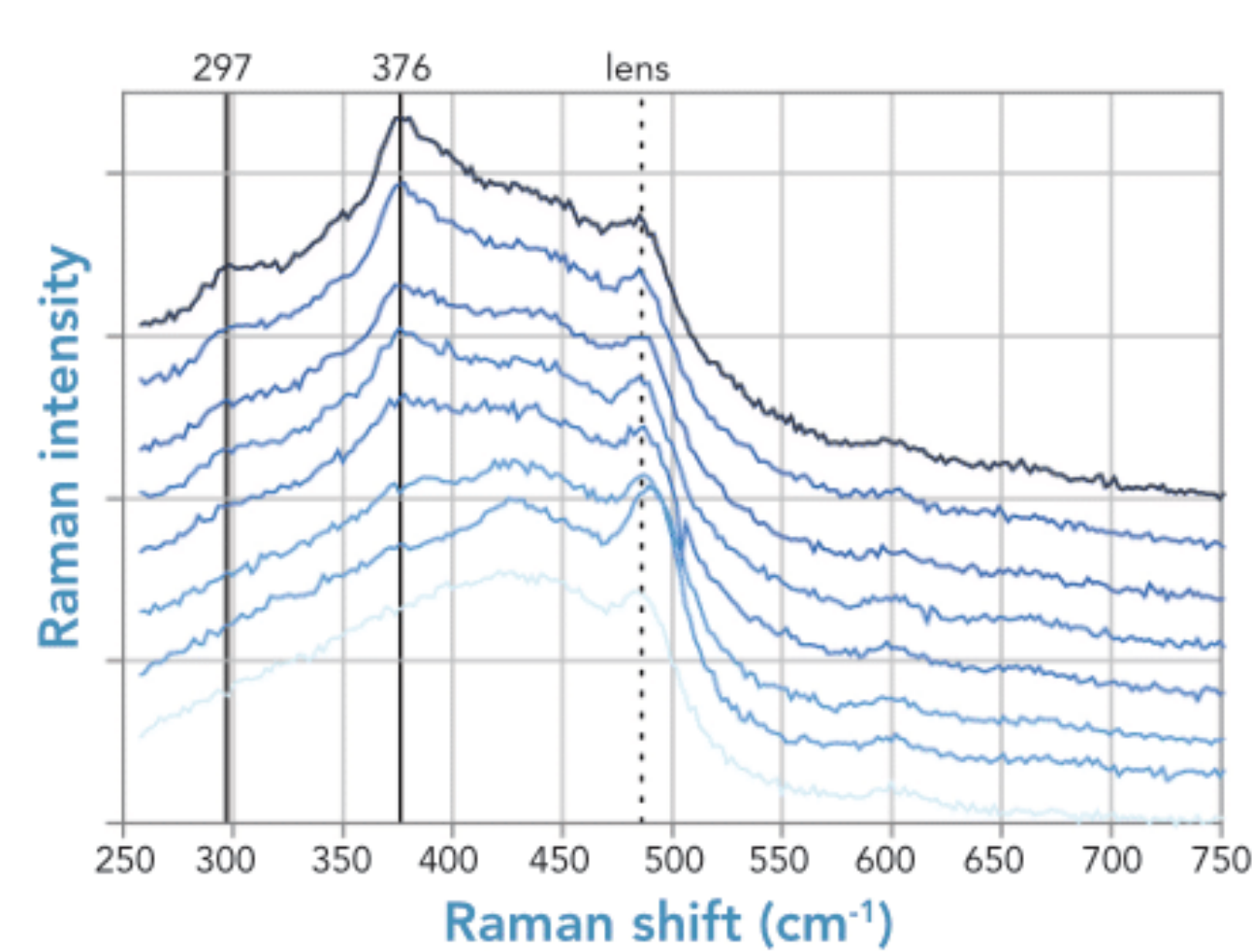
### Setup



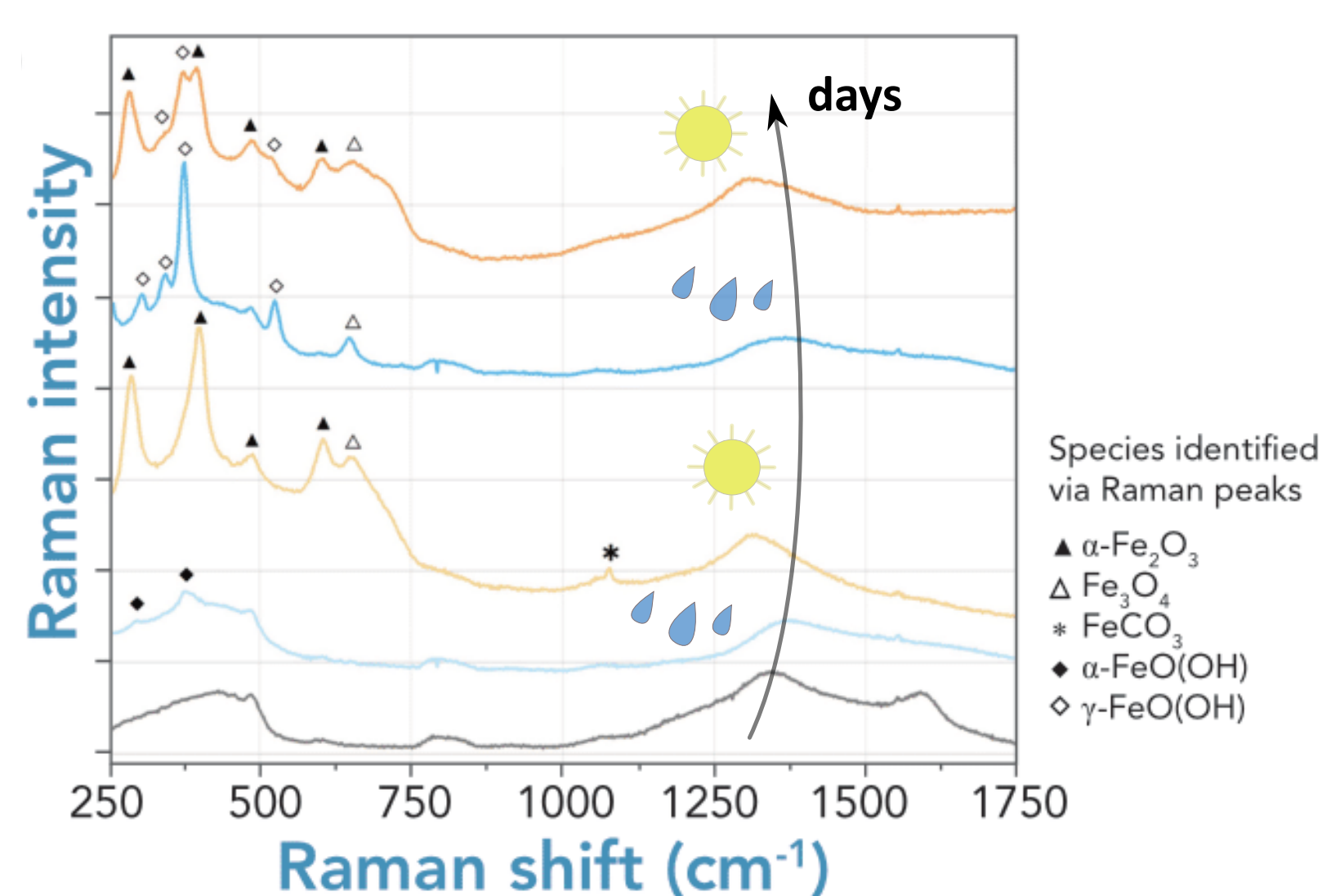
### Corrosion Environment



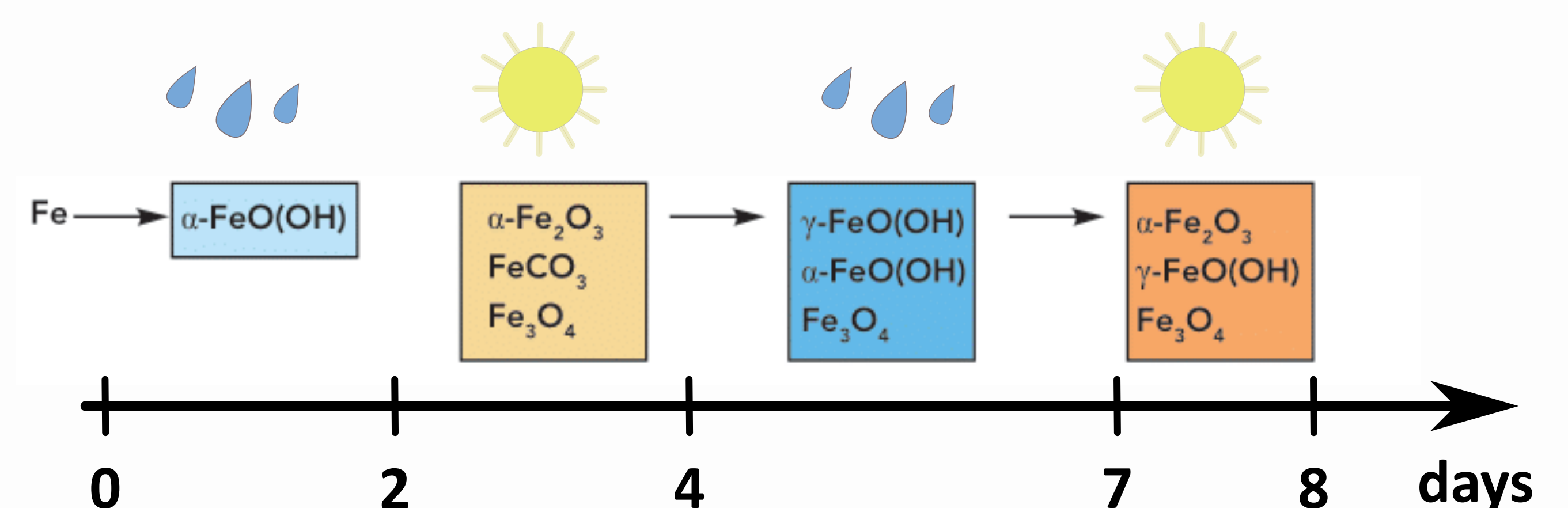
### Fast Corrosion Start



### Dry and Wet Phases: Different Species



### Corrosion Insights



## Conclusion

### Raman to Monitor Complex Processes

- ✓ Corrosion
- ✓ Electrochemistry
- ✓ Fermentation
- ✓ Reactions