

University of Groningen

## Illuminating the physicochemical perspective on ageing

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DOI:  
[10.33612/diss.929648479](https://doi.org/10.33612/diss.929648479)

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*Document Version*  
Publisher's PDF, also known as Version of record

*Publication date:*  
2024

[Link to publication in University of Groningen/UMCG research database](#)

*Citation for published version (APA):*

Mouton, S. (2024). *Illuminating the physicochemical perspective on ageing*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen. <https://doi.org/10.33612/diss.929648479>

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**Propositions**  
Accompanying the dissertation

ILLUMINATING  
THE PHYSICOCHEMICAL PERSPECTIVE  
ON AGEING

1. When investigating biological processes in the context of cellular ageing, one should consider ageing-induced changes in the physical and chemical parameters of the intracellular environment - *Chapters 2, 6 & 8*
2. Constitutive expression of FRET-based sensors alleviates artifacts originating from unequal maturation halftimes of the FRET pair - *Chapter 3*
3. There isn't a universally best FRET pair; rather, the selection depends on the specific experimental approach employed - *Chapter 4*
4. When designing a FRET sensor, choosing for two similarly imperfect fluorescent proteins is better than selecting the best fluorescent proteins within their colour category - *Chapter 4*
5. FRET sensors are a valuable tool to spatiotemporally resolve structural transitions in protein self-association - *Chapter 5*
6. The ageing intracellular environment undergoes dynamic changes, evidenced by replicatively aged yeast cells exhibiting an acidifying cytosol and increased organellar crowding - *Chapter 6*
7. The cytosol of yeast cells acidifies modestly in early ageing and sharply after entry into senescence – *Chapter 6*
8. ATP levels increase in the course of replicative ageing, but decline after senescence entry - *Chapter 7*
9. “By destroying an idea, you make progress”- *Paul Nurse*
10. “You are on the planet to change the world, so get on with it!”- *Christopher Barratt*
11. “Ageing is not lost youth but a new stage of opportunity and strength” – *Betty Friedan*

*Sara N. Mouton*