

# List of Publications

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Dr. Jonas Wessén

## Refereed original research

Equal contribution first authorships are indicated by asterisks (\*).

- **Sequence-based prediction of condensate composition reveals that specificity can emerge from multivalent interactions among disordered regions**  
J. Wessén\*, N. De La Cruz\*, H. Lyons, H. S. Chan, B. Sabari\*  
(Submitted to journal)  
[Preprint: bioRxiv:2025.06.13.659429](https://doi.org/10.1101/2025.06.13.659429)
- **A diversity-enhanced genetic algorithm for efficient exploration of parameter spaces**  
J. Wessén\*, E. Camargo-Molina\*  
(Submitted to journal)  
[Preprint: arXiv:2412.17104](https://doi.org/10.1101/2412.17104)
- **Electrostatics of Salt-Dependent Reentrant Phase Behaviors Highlights Diverse Roles of ATP in Biomolecular Condensates**  
Y.-H. Lin\*, T. H. Kim\*, S. Das\*, T. Pal, J. Wessén, A. K. Rangadurai, L. E. Kay, J. D. Forman-Kay, H. S. Chan  
*eLife* **13**:RP100284 (2025)  
[DOI: 10.7554/eLife.100284.3](https://doi.org/10.7554/eLife.100284.3)  
[Preprint: arXiv:2401.04873](https://doi.org/10.1101/2401.04873)
- **Differential Effects of Sequence-Local versus Nonlocal Charge Patterns on Phase Separation and Conformational Dimensions of Polyampholytes as Model Intrinsically Disordered Proteins**  
T. Pal\*, J. Wessén\*, S. Das\*, H. S. Chan  
*J. Phys. Chem. Lett.* 2024, 15, 32, 8248-8256  
[DOI: 10.1021/acs.jpcllett.4c01973](https://doi.org/10.1021/acs.jpcllett.4c01973)  
[Preprint: arXiv:2407.07226](https://doi.org/10.1101/2407.07226)
- **Biological condensates form percolated networks with molecular motion properties distinctly different from dilute solutions**  
Z. Shen, B. Jia, Y. Xu, J. Wessén, T. Pal, H. S. Chan, S. Du, M. Zhang  
*eLife* **12**:e81907 (2023)  
[DOI: 10.7554/eLife.81907](https://doi.org/10.7554/eLife.81907)  
[Preprint: 10.1101/2022.07.20.500769](https://doi.org/10.1101/2022.07.20.500769)
- **Analytical Formulation and Field-Theoretic Simulation of Sequence-Specific Phase Separation of Proteinlike Heteropolymers with Short- and Long-Spatial-Range Interactions**  
J. Wessén, S. Das, T. Pal, and H. S. Chan  
*J. Phys. Chem. B* 2022, 126, 45, 9222–9245  
[DOI: 10.1021/acs.jpccb.2c06181](https://doi.org/10.1021/acs.jpccb.2c06181)  
[Preprint: arXiv:2209.04016](https://doi.org/10.1101/2209.04016)
- **Field theory description of ion association in re-entrant phase separation of polyampholytes**  
J. Wessén\*, T. Pal\*, and H. S. Chan  
*J. Chem. Phys.* **156**, 194903 (2022)  
[DOI: 10.1063/5.0088326](https://doi.org/10.1063/5.0088326)  
[Preprint: arXiv:2201.11834](https://doi.org/10.1101/2201.11834)

- **A Simple Explicit-Solvent Model of Polyampholyte Phase Behaviors and Its Ramifications for Dielectric Effects in Biomolecular Condensates**  
**J. Wessén\***, T. Pal\*, S. Das\*, Y.-H. Lin and H. S. Chan  
*J. Phys. Chem. B* 2021, 125, 17, 4337–4358  
DOI: 10.1021/acs.jpcc.1c00954  
Preprint: arXiv:2102.03687
- **Subcompartmentalization of polyampholyte species in organelle-like condensates is promoted by charge-pattern mismatch and strong excluded-volume interaction**  
T. Pal\*, **J. Wessén\***, S. Das\* and H. S. Chan  
*Phys.Rev. E* **103** (2021), no.4, 042406  
DOI: 10.1103/PhysRevE.103.042406  
Preprint: arXiv:2006.12776
- **Scale hierarchies, symmetry breaking and SM-like fermions in SU(3)-family extended SUSY trinification**  
J. E. Camargo-Molina, A. Morais, A. Ordell, R. Pasechnik and **J. Wessén**  
*Phys.Rev. D* **99** (2019), no.3, 035041  
DOI: 10.1103/PhysRevD.99.035041  
Preprint: arXiv:1711.05199  
*(Authors listed in alphabetical order)*
- **Heavy charged scalars from  $c\bar{s}$  fusion: A generic search strategy applied to a 3HDM with  $U(1) \times U(1)$  family symmetry**  
J. E. Camargo-Molina, T. Mandal, R. Pasechnik and **J. Wessén**  
*J. High Energ. Phys.* (2018) 2018: 24.  
DOI: 10.1007/JHEP03(2018)024  
Preprint: arXiv:1711.03551  
*(Authors listed in alphabetical order)*
- **Reviving trinification models through an  $E_6$ -extended supersymmetric GUT**  
J. E. Camargo-Molina, A. Morais, A. Ordell, R. Pasechnik, M. Sampaio and **J. Wessén**  
*Phys.Rev. D* **95** (2017) no.7, 075031.  
DOI: 10.1103/PhysRevD.95.075031  
Preprint: arXiv:1610.03642  
*(Authors listed in alphabetical order)*
- **All one-loop scalar vertices in the effective potential approach**  
J. E. Camargo-Molina, A. Morais, R. Pasechnik, M. Sampaio and **J. Wessén**  
*J. High Energ. Phys.* (2016) 2016: 73.  
DOI: 10.1007/JHEP08(2016)073  
Preprint: arXiv:1606.07069  
*(Authors listed in alphabetical order)*
- **On a radiative origin of the Standard Model from trinification**  
J. E. Camargo-Molina, A. Morais, R. Pasechnik and **J. Wessén**  
*J. High Energ. Phys.* (2016) 2016:129.  
DOI: 10.1007/JHEP09(2016)129  
Preprint: arXiv:1606.03492  
*(Authors listed in alphabetical order)*
- **Thermodynamics of amyloid formation and the role of intersheet interactions**  
A. Irbäck and **J. Wessén**  
*J. Chem. Phys.* **143**, 105104 (2015)  
DOI: 10.1063/1.4930280  
Preprint: arXiv:1601.00478

## Chapters in scientific books

- **Numerical Techniques for Applications of Analytical Theories to Sequence-Dependent Phase Separations of Intrinsically Disordered Proteins**  
Y.-H. Lin\*, **J. Wessén\***, T. Pal\*, S. Das and H. S. Chan  
In: Zhou, HX., Spille, JH., Banerjee, P.R. (eds) *Phase-Separated Biomolecular Condensates* (2023). *Methods in Molecular Biology*, vol 2563. Humana, New York, NY.  
DOI: [10.1007/978-1-0716-2663-4\\_3](https://doi.org/10.1007/978-1-0716-2663-4_3)  
Preprint: [arXiv:2201.01920](https://arxiv.org/abs/2201.01920)

## Conference contributions

- **Charged scalars from  $SU(3)^3$  theories**  
J. E. Camargo-Molina, R. Pasechnik and **J. Wessén**  
*PoS(CHARGED2016)030*  
DOI: [10.22323/1.286.0030](https://doi.org/10.22323/1.286.0030)  
Preprint: [arXiv:1701.02757](https://arxiv.org/abs/1701.02757)  
*(Authors listed in alphabetical order)*
- **On a radiative origin of the Standard Model in non-supersymmetric trinification with global  $SU(3)_F$**   
J. E. Camargo-Molina, A. Morais, R. Pasechnik and **J. Wessén**  
*PoS LHCP2016* (2016) 241  
DOI: [10.22323/1.276.0241](https://doi.org/10.22323/1.276.0241)  
*(Authors listed in alphabetical order)*

## Other scientific publications

- Wessén, J. (2018). *Family symmetries and radiative corrections in multi-scalar extensions of the Standard Model*.  
Lund: Lund University, Faculty of Science, Department of Astronomy and Theoretical Physics.  
e-print: <https://lup.lub.lu.se/record/cc5a60f5-450b-4439-8db2-5929ad1798e6> (Ph.D. thesis)
- Wessén, J. (2014). *Amyloid nucleation in presence of crowders*.  
Lund: Lund University, Faculty of Science, Department of Astronomy and Theoretical Physics.  
e-print: <http://lup.lub.lu.se/student-papers/record/4519439> (Master's thesis)
- Wessén, J. (2012). *Dark matter signatures in cosmic gamma-rays*.  
Lund: Lund University, Faculty of Science, Department of Astronomy and Theoretical Physics.  
e-print: <http://lup.lub.lu.se/student-papers/record/2827051> (Bachelor's thesis)