Oliver Hagger

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MChem, PGCE, MRSC

Personal Summary

I have a strong background in leading research projects and managing multi-national collaborations, with expertise in programming, data visualisation, and scientific writing. I have multiple publications in top-tier, peer-reviewed journals. My academic journey includes a Doctor of Philosophy from University College London in partnership with DSTL, complemented by hands-on research experience at renowned institutions such as Brown University and the University of Southampton.

RELEVANT PUBLICATIONS

O. S. J. Hagger, et. al., Materials Advances, 2023, 4, 3239 – 3245
F. Lockwood Estrin, O. S. J. Hagger, et. al., Advanced Materials Interfaces, 2024, 2400256
S. Agrotis, O. S. J. Hagger, et. al., Applied Materials Today, 2024, 39, 102286

GRANTS AND AWARDS

UCL EPSRC IAA 2022-25 Impact Acceleration (£10,000)
Analytical Chemistry Trust Fund Grant (£750)
Researcher Development Travel Grant (£500)

RESEARCH EXPERIENCE

DSTL & University College London **London, UK**
Material Chemical Engineer Ph.D. September 2021 – Present

- Lead metallic materials development, including selection and technical development.
- In-depth knowledge of metallic materials and coatings applications.
- Manage and deliver materials-based projects within strict timelines.
- Experience leading and completing risk assessments, and COSHH forms and SOPs.
- Presented at multiple national and international conferences.
- Conducted complex CFD simulations to analyse fluid flow and heat transfer.
- Perform failure investigations for in-service, testing, or production issues.

Techniques: 3D printing, AFM, Light microscopy, Mass spectrometry, Raman, SEM, SERS, TEM, UV-Vis, XPS, and XRD.

Brown University **Brown University, Rhode Island, USA**
Scientific researcher June 2019 – September 2019

- Facilitated weekly team meetings to review progress & identify solutions, resulting in a reduction of errors and successfully meeting deadlines.
- Adapted quickly to new research environments, relocating across various countries, and collaborating with diverse teams of scientists.

Techniques: GC, HPLC and NMR.

University of Southampton **Southampton, UK**
Scientific researcher September 2018 – May 2019

- Collaborated with a multidisciplinary team of scientists to integrate and fit into a laboratory environment, driving the successful execution of projects.

Techniques: IR, Mass spectrometry, PXRD, SCXRD, and TGA.

EDUCATION

Ph. D., Materials Chemical Engineering **University College London, UK**
MChem, Chemistry – *Second Division Upper Class* **University of Southampton, UK**
A-levels – *Chemistry (A), Mathematics (A), AS Physics (A), Biology (B)* **Cedars Upper School, UK**

SKILLS & INTERESTS

Programming Languages: HTML, CSS, Latex, Python, R, SQL.
Visualisation and design: Adobe Suite, Blender, Fusion 360, Inkscape, Microsoft Office, Origin, PowerBI, Tableau.
Languages: French (Beginner/Intermediate)
Interests: Fitness, healthy cooking, independent learning, public speaking, and travel

WORK EXPERIENCE

University College London **London, UK**
Educator September 2021 – Present

- Instructed an advanced analytical chemistry master's module, guiding students in creating cutting-edge sensors by utilising Arduino devices. Delivered comprehensive assistance in statistical modelling to enhance the interpretation and analysis of data.

QTS Educator **Bedfordshire, UK**
Educator September 2020 – September 2021

- Organised and facilitated public speaking workshops for teachers, improving teacher confidence levels and leading to more engaging classroom discussions.
- Developed and delivered engaging lesson plans to over 100 students, resulting in a 90% pass rate in exams.

QA **London, UK**
Data analyst June 2020 – September 2020

- Delivered ad-hoc analysis to 40+ clients, meeting objectives within budget.
- Produced campaign analyses for clients, uncovering trends & providing actionable recommendations.
- Used SQL, Python and R for predictive modelling and statistical inference.

National Crystallography Centre **Southampton, UK**
Data Scientific researcher September 2019 – June 2020

- Managed the handling of confidential client data while conducting comprehensive research on the properties of crystals using single-crystal X-ray diffraction techniques.
- Harnessed Diamond Light Source facilities to analyse and produce detailed reports.
- Collaborated with Rigaku and Merck to optimise SCXRD techniques.

PERSONAL PROJECTS

- **Daily Commute Analysis** – Conducted an in-depth analysis of my daily commute, extracted from my Apple Watch, utilising R and Tableau to showcase critical insights, including optimal travel times and patterns.
- **Premier League VAR Analysis** – Explored insights into the impact of VAR (Video Assistant Referee) in the Premier League by web scraping relevant data and manipulating it using R. The visualisation, carried out using Inkscape, revealed trends in VAR decision-making.
- **Premier League Simulation** – Simulated the forthcoming Premier League season through 10,000 iterations of Monte Carlo simulations to forecast the final table, considering various statistical factors like team form and player injuries.

VOLUNTEERING

Sports

- Raised over £1500 for **Brain Tumour Research** and The **British Heart Foundation** by completing multiple half and full marathon events.
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REFERENCES

Available on request