

Personal Statement

I am an early stage post-doctoral researcher in the field of rudorffites indoor photovoltaics.

I have a strong record of delivering consistent results and collaborating well with others.

I look forward to contributing significant research for the indoor photovoltaics field in the UK and becoming an independent group leader in five years!

Qualifications

E4F Post-doctoral Fellowship *University of Strathclyde, UK* *14.06.2022 – 13.06.2024*

Project: Bismuth-Based Rudorffites for Stable and Sustainable Indoor Light Harvesting to Power the Internet of Things

Post-doctoral Researcher *ICFO, Spain* *09.2020 – 07.2021*

Project: Lead-free perovskite thin film/colloidal solar cells. Supervisor: Prof. Gerasimos Konstantatos

- Succeeded in synthesizing a novel organic/inorganic lead-free perovskite material with superb stability and photovoltaic properties

PhD in Physical Chemistry *Uppsala University, Sweden* *09.2015 – 10.2019*

Thesis: “Lead-free Metal-halide Thin Films Solar Cells”. Main supervisor: Prof. Erik Johansson

- Succeeded in developing novel large band gap bismuth perovskite solar cells as lead-free alternatives.
- Achieved record efficiencies for Ag-Bi-I based solar cells. [[DOI Link](#)]
- Gained broad research experience across synthesis, device optimization, and optoelectronic/spectroscopic characterization and analyzing.
- Supervised 3 master students, resulting in 1 *ChemSusChem* publication and 1 manuscript.

MSc in Polymer Chemistry & Physics *Chinese Academy of Sciences* *09.2012 – 06.2015*

Thesis: Study on Heterojunction Perovskite Solar Cells. Main supervisor: Prof. Shuping Pang

- Gained an early start to research in lead halide perovskites before the field got really “hot”!
 - Demonstrated good independent working skills.
- Achieved relatively high efficiencies at the time.
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Research Skills

- ✚ 8+ years experience in perovskite and hybrid inorganic photovoltaic device
 - ✚ Highly skilled in device fabrication & characterisation including IPCE/EQE, J-V, electron lifetime, PIA, etc.
 - ✚ Highly experienced in spectroscopic techniques for thin-film characterisation, such as SEM, EDX, XRD, UV-Vis, PL, XPS, and Raman.
 - ✚ Strong independent and team working skills.
 - ✚ Good literature knowledge of lead halide perovskites.
 - ✚ Competent background in Chemistry including general experimental and analytical skills.
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Key skills

- ✚ Fluent English and native Chinese speaker.
 - ✚ Experienced in academic writing, and handling journal submissions/correspondence.
 - ✚ Competent in MS office, Origin, ChemDraw, Vesta & Photoshop.
 - ✚ 4+ years' experience in Master student project supervision and course teaching.
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Publications

1. **Zhu, H.**, Johansson, M.B., and Johansson, E.M. (2016). *JPCL*, 7(17):3467–3471. [[DOI link](#)] Cited: 109
2. **Zhu, H.**, Johansson, M. B. and Johansson, E. M. (2018). *ChemSusChem*, 11(6):1114–1120. [[DOI Link](#)]
3. **Zhu, H.**, Pan, M., Johansson, M. B. and Johansson, E. M. (2017). *ChemSusChem*, 10(12):2592–2596. [[DOI Link](#)] Cited: 44
4. **Zhu H.**, Erbing, A., Wu, H., Man, G. J., M., Johansson, etc. (2019). *ACS Appl. Energy Mater.* 2020, 3, 8, 7372–7382. [[DOI Link](#)]
5. Wu, H., **Zhu, H.**, Erbing, A., Johansson, E. M, etc. (2019). *ACS Applied Energy Materials*, 2, 8, 5356-5362. [[DOI Link](#)]
6. **Zhu H.** Lead-free Metal-halide Thin Films Solar Cells. Uppsala University. [[Link](#)]
7. Pazoki, M., Johansson, M. B., **Zhu, H.**, Johansson, E. M, etc. (2016). *JPCC*, 120(51), 29039-29046.
8. Johansson, M. B., Philip, B, **Zhu, H.**, Johansson, E. M, etc. (2019). *Inorganic Chemistry*, 58(18). [[DOI Link](#)]
9. **Zhu, H.**, Wang, D., Cui, G. (2015). *CHINESE J INORG CHEM*, 5 (31), 1003-1009. [[Link](#)]
10. Wang, D., Liu, Z., **Zhu, H.**, Pang, S. (2014). *CHEM MATER*, 26(24), 7145-7150.

Conferences posters presented at:

HOPV17, Lausanne, Switzerland, 2017. Poster
HOPV18, Benidorm, Spain, 2018. Poster

Scholarships and Funding

1. Ph.D. study fellowship from China Scholarship Council (144,000kr /year), 2015-2019.
 2. E4F Post-doctoral Fellowship, 03.2022 – 02.2024.
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Referees

Prof. Erik Johansson
erik.johansson@kemi.uu.se
+46184713663

Prof. Gerrit Boschloo
gerrit.boschloo@kemi.uu.se
+46184713303

Prof. Gerasimos Konstantatos
Gerasimos.Konstantatos@icfo.eu
+34935534182
