

Top universities and researchers in perovskite solar cell research

In the first of a regular series looking at who is producing highly cited research in different areas, *THE* explores a subject currently deemed the 'most prominent' by Elsevier metrics

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By [Simon Baker](/content/simon-baker) (/content/simon-baker)

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Research into renewable energy has taken an exciting new direction in recent years with the discovery of a new lost-cost highly efficient way of making solar cells.

The method, which uses solar cells made from materials known as perovskites, has already spawned a number of start-up companies that hope to revolutionise the market.

Its growth as a major field in applied physics is shown by research into perovskite solar cells using the compound methylammonium lead heading a list of the most prominent scientific topics on SciVal, Elsevier's tool for analysing data in its Scopus database of published research.

SciVal recently introduced the "topic prominence" module (<https://www.elsevier.com/solutions/scival/releases/topic->



Source: iStock

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prominence-in-science) to rank almost 100,000 global research topics according to the current momentum they have in terms of citations and views by other scholars.

Twice each month, *Times Higher Education* will look at which universities and academics are producing the highest-quality research either in topics that are high ranking for prominence or in standard subject areas.

But which universities and academics have been at the forefront of developing this solar cell technology that is currently the most prominent in science?

The following graph shows the 10 institutions that published the most highly cited research into methylammonium lead solar cells.

It shows, using a measure known as an expected output index (EOI), that the University of Oxford

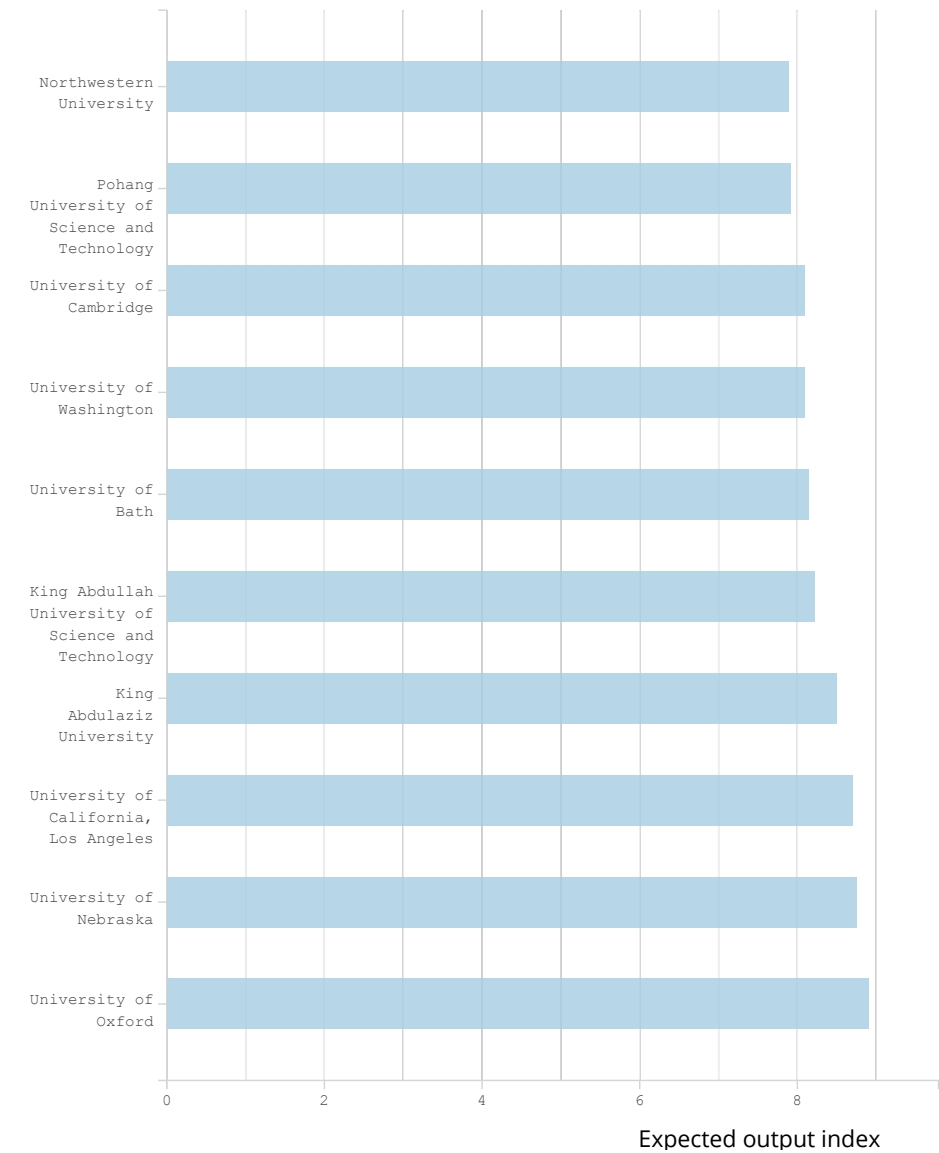
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Top 10 universities in methylammonium lead perovskite solar cell research, 2014 to 2017

By expected output in top 10 per cent of most highly cited research for topic. World average = 1



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Source: Elsevier/SciVal. Only academic institutions publishing at least 50 articles from 2014 to 2017 included.

The key reason for Oxford's performance has been the success of a team led by Henry Snaith, professor of physics at the university's Clarendon Laboratory, that is researching low-cost alternatives to traditional solar cell technology.

This is shown by Professor Snaith topping a list of the 10 individual academics worldwide with the highest EOI for research into perovskite solar cells using methylammonium lead. His EOI means he was 65 times more likely than the world average to publish in the top 1 per cent most cited research.

The top 10 also features five entries from researchers at the <https://www.timeshighereducation.com/world-university-rankings/ecole-polytechnique-federale-de-lausanne> École Polytechnique Fédérale de Lausanne (<https://www.timeshighereducation.com/world-university-rankings/ecole-polytechnique-federale-de-lausanne>), including Michael Grätzel, director of the institution's Laboratory of Photonics and Interfaces, where Professor Snaith was a postdoctoral researcher for two years in the 2000s.

Top 10 university researchers in SciVal topic "perovskite; solar cells; methylammonium lead", 2014 to 2017, by expected output in top 1 per cent of world's most cited research (world average =1)

Author	
Snaith, Henry J.	Univ
Abate, Antonio	École Polytechnique Fédéral
Saliba, Michael	École Polytechnique Fédéral
Grätzel, Michael	École Polytechnique Fédéral
Huang, Jinsong	University of N
Mathews, Nripan	Nanyang Technological Unive
Zakeeruddin, Shaik Mohammed Ohammed	École Polytechnique Fédéral
Bakr, Osman M.	King Abdullah University of Science and Te
Nazeeruddin, Mohammad Khaja Haja	École Polytechnique Fédéral
Jen, Alex K.Y.	Universit

Source: Elsevier/SciVal. Note: Only academics publishing at least 50 articles from 2014 to 2017 included.

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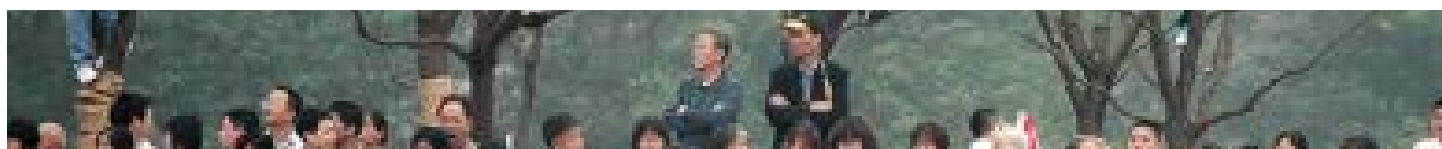
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