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RAE reveals excellence amid the filing confusion, says Helen Tunnicliffe

MANCHESTER University has broken into the top three of UK chemical engineering departments, joining Cambridge and Imperial College at the top of the Research Assessment Exercise (RAE) table. All three institutions saw 85% of their research graded at 3* or 4*, meaning *internationally excellent* or *world-leading*.

Chemical engineering RAE 2008 results	2008 % 3* and 4*	2001 Rating
University of Cambridge	85	5
Imperial College of Science, Technology and Medicine	85	5*
University of Manchester (formerly UMIST)	85	5
University College London	75	5*
University of Birmingham	65	5*
University of Newcastle upon Tyne	60	4/5
University of Bath	55	4
University of Sheffield	55	4
Heriot-Watt University	45	4
University of Strathclyde	40	4

Chemical engineering did very well across the board: 65% of all research assessed under UoA 26 – the RAE’s chemical engineering section – was graded at the top levels of 3* or 4*. This compares to an engineering average of 57% and the overall cross-disciplinary average of 54%. Some 94% of chemeng research was graded as *internationally recognised* or above (2*, 3* and 4*).

However, more than half of the 22 IChemE-accredited chemical engineering departments in the UK filed in other categories. Oxford University, which had filed under general engineering, saw 85% of its research graded at 3* or 4*, while Leeds and Swansea, also in the same category, scored 80%.

Michael Sutcliffe, head of the School

of Chemical Engineering & Analytical Science at Manchester, is delighted: “Our success capitalises on the synergies between chemical engineering and bioscience, chemistry, mathematics, and analytical and measurement science. Our broad research base enables us to study the design, operation and integration of complex systems – particularly industrial, biological, and instrumentation.”

At the bottom of the rankings is the University of Strathclyde, with only 40% of its research graded at 3* or 4*. However, Carl Schaschke, head of Strathclyde’s chemeng department, remains upbeat: “While we may be tenth out of ten, it is a positive reflection that between 2001 and 2008 there has been a concerted effort to develop the research capabilities of our staff and to invest in research.” He points out that for the previous RAE in 2001, the department didn’t submit under the chemical engineering group but instead mostly entered under chemistry. “The department has recruited five excellent academics in the past 18 months, four of whom unfortunately missed the RAE submission. We also have a new £2.1m (\$3.1m) laboratory which was opened last January,” he adds.

Steve Bull, head of chemical engineering at Newcastle, says it is disappointing that only ten departments filed under chemical engineering in 2008, down from 15 in 2001. “This does not reflect the health of the discipline,” he says.

The universities that have filed elsewhere deny the suggestion that they might have wanted to disguise less-than-impressive performance. The chemical engineering departments at Oxford,

Edinburgh, Surrey and Leeds all say that their decision reflects a growing trend of integration within engineering.

Chris Wright, director of chemical and biological engineering at Swansea, says his department is part of a broad range of interdisciplinary research, with major initiatives within health care and the environment that require chemical engineering input.

The results of the RAE are crucial to determine how much public money an academic institution will get for research. The better the research, the more money it will get when funding is allocated on 5 March.

The grading system was changed from the 2001 system, when departments were given a single 1–5* grading, to a more detailed grading profile. This allows assessors to “identify pockets of excellence” – even within a department with generally lower research quality.

The RAE will be replaced by another system in 2014, likely to be called the Research Excellence Framework (REF). This will make greater use of metrics-based indicators, including how many times a scientist’s work is cited by others, and the amount of funding a department receives for research from other sources.

David Eastwood, chief executive of the Higher Education Funding Council for England (HEFCE), is proud of the universities’ achievements: “Although we cannot make a direct comparison with the previous exercise carried out in 2001, we can be confident that the results are consistent with other benchmarks indicating that the UK holds second place globally to the US in significant subject fields.”



Results in other UoA submissions	2008 % 3* and 4*	2001 Rating
University of Oxford (gen eng)	85	5*
University of Leeds (gen eng)	80	5
University of Wales Swansea (gen eng)	80	3a
University of Nottingham (gen eng)	75	4
University of Surrey (gen eng)	75	5
Loughborough University (mech eng)	70	4
The Queen’s University of Belfast (chemistry/civil eng)	55/75	4
London South Bank University (gen eng)	60	4
University of Edinburgh (2008 gen eng, 2001 chem eng)	55	4
University of Aston (gen eng)	35	5
University of the West of Scotland (formerly Paisley) (allied health, earth systems, physics, metallurgy)	40/15/20/50	2
University of Teeside (gen eng)	25	4