The Department of Land Surveying and Geo-Informatics (LSGI) at PolyU Ranked the Number One Geomatics Department in the World in Research Publication Performance in Geomatics

The Department of Land Surveying and Geo-Informatics (LSGI), in the Faculty of Construction and Land Use (FCLU) at PolyU is the only department in Hong Kong's higher education institutions specialising in the field of Geomatics. Geomatics is a discipline which has developed over the last two decades in response to the need for spatial information in the digital age. It is concerned with techniques and applications in a number of traditional disciplines such land surveying, geographic information systems, remote sensing, geosciences, and land information management. Over the past two decades, LSGI has made impressive progress in its research capability and reputation. A recent independent survey by Thomson Reuters, a US company that produces the Science Citation Index (SCI) database and other related products, has confirmed LSGI as the leading department worldwide in Geomatics and Geomatics-related disciplines.

The five tables below encompass all aspects of the Geomatics discipline, and show that PolyU's LSGI is followed by two top universities in the world that also have world renowned Geomatics programmes, the University of Melbourne (ranked 38 in the Times Higher Education rankings for 2009) and the University of Calgary (ranked 138), in terms of the number of SCI papers per staff. In terms of the number of citations per staff, (citations are equivalent to the five-year impact factor of a journal defined by Thomson Reuters in their annual Journal Citation Reports), LSGI's performance exceeds all other departments in the fields of remote sensing and imaging science and photographic technology, and is second to either the University of Melbourne, or the University of Calgary, in the other three major fields of the Geomatics discipline.

In the field of **Remote Sensing**, LSGI ranks number one, and leads the University of Calgary, in the total number of SCI journal papers published per staff for the six-year period of 2003 to 2008, as well as in the number of citations per staff received by these papers from other SCI journal papers.

Table 1: SCI Publications and Citations in Remote Sensing among Geomatics Departments

Ranking	Institution	SCI papers 2003-2008	Papers per staff 2003-2008	Citations 2003-2008	Citations per staff 2003-2008
1	The Hong Kong Polytechnic University	51	3.6	100	7.1
3	The University of Calgary	61	3.0	124	6.2
2	The University of Melbourne	55	1.2	64	3.2
4	Curtin University	17	1.3	80	6.1

In the field of **Imaging Science and Photographic Technology**, LSGI is the most productive Geomatics Department in the world in this field, in terms of total publications and publications per staff, as well as in total citations, but is second to the University of Melbourne in the number of citations per staff.

Table 2: SCI Publications and Citations in Imaging Science and Photographic

Technology among Geomatics Departments

Ranking	Institution	SCI papers 2003-2008	Papers per staff 2003-2008	Citations 2003-2008	Citations per staff 2003-2008
1	The Hong Kong Polytechnic University	30	2.1	79	5.6
2	The University of Melbourne	15	1.5	63	6.3
3	The University of Calgary	27	1.3	53	2.6
4	Curtin	9	0.9	63	4.8

In the field of, **Multidisciplinary Geosciences** PolyU leads all other Geomatics departments in the world in the number of papers published per academic staff in SCI journals over the five-year period of 2003 to 2008, and is second to the University of Melbourne in the total number of citations per academic staff, received by these papers from other SCI journal papers. The results for the number of citations per paper show that in this field, there is room for LSGI to improve the impact of its work.

Table 3: SCI Publications and Citations in Multidisciplinary Geosciences among Geomatics Departments

Ranking	Institution	SCI papers (2003-2008)	Papers per staff 2003-2008	Citations 2003-2008	Citations per staff 2003-2008
1	The Hong Kong Polytechnic University	36	2.6	83	5.9
2	The University of Melbourne	24	2.4	89	8.9
3	The University of Calgary	44	2.2	75	3.7
4	Curtin	11	0.8	35	2.7

In the field of, **Civil Engineering** PolyU leads all other Geomatics departments in the world in both the total number of papers, and total number of citations in SCI journals over the six-year period of 2003 to 2008. It also leads in the total number of papers per staff but is second to the University of Melbourne in the total number of citations per academic staff, received by these papers from other SCI journal papers.

Table 4: SCI Publications and Citations in Civil Engineering among Geomatics Departments

Ranking	Institution	SCI papers 2003-2008	Papers per staff 2003-2008	Citations 2003-2008	Citations per staff 2003-2008
1	The Hong Kong Polytechnic University	30	2.1	79	5.6
2	The University of Melbourne	15	1.5	63	6.3
3	The University of Calgary	27	1.3	53	2.6
4	Curtin	9	0.9	63	4.8

In the field of **Physical Geography**, LSGI is second to the University of Calgary, in the total number of SCI journal papers per staff published over the six-year period of 2003 to 2008, and

is joint second after the University of Calgary, in the total number of citations per staff, received by these papers from other SCI journal papers. The results for the number of citations per staff show that in this field, there is room for LSGI to improve the impact of its work.

Table 5: SCI Publications and Citations in Physical Geography among Geomatics Departments

Ranking	Institution	SCI papers 2003-2008	Papers per staff 2003-2008	Citations	Citations per staff 2003-2008
1	The University of Calgary	16	0.8	52	2.6
2	The Hong Kong Polytechnic University	10	0.7	16	1.1
3	Curtin University	4	0.3	14	1.1

Current and past staff members from LSGI have also received recognition from their peers as making significant contributions to the Geomatics arena. Most recently, at the 2008 quadrennial meeting of the International Society for Photogrammetry and Remote Sensing, Prof Li Zhilin was presented with the Gino Cassinis Award for "a person who has significantly enhanced the mathematical and statistical foundations of the photogrammetry, remote sensing or spatial information sciences" and Prof. Christopher Gold (a past LSGI Chair Professor in GIS) was presented with the very first Wang Zhizhou for his "significant achievement or innovation in the spatial information sciences". Prof. Shi Wenzhong has received the State Natural Science Award (Second class) from the State Council of the Peoples' Republic of China in 2007 and Prof Li received the degree of Doctor of Science from Glasgow University, Scotland, earlier this year. In 2006 one of LSGI's postgraduate students, Wong Man Sing, received the very first Fulbright Student Scholarship to be awarded in Hong Kong.

In addition to the publication of papers in high quality journals, experts in the LSGI have also been highly active in deploying their research outcomes in solving challenging real-world problems, either through patents on the outcomes of their research or the offering of consultancy services to government and industry. The web-based public transportation query system, EasyGo, developed by Dr. Lilian Pun and her LSGI colleagues has been adopted by the Transport Department as its Public Transport Enquiry System (PTES) as a service for the whole of Hong Kong.

The research achievements of the LSGI have no doubt contributed significantly to the international reputation of PolyU and particularly that of Geomatics research in Hong Kong.

Comparative scores per head of staff across disciplines (2003-8)

		Remote Sensing		Imaging Science and Photographic Technology		Multidisciplinary Geosciences		Civil Engineering		Physical Geography		Mean	
Rank	Institution	Papers	Citations	Papers	Citations	Papers	Citations	Papers	Citations	Papers	Citations	Papers	Citations
1	PolyU	3.6	7.1	2.1	5.6	2.6	5.9	2.1	5.6	0.7	1.1	2.22	5.06
2	Calgary	3.0	6.2	1.3	2.6	2.2	3.7	1.3	2.6	0.8	2.6	1.72	3.54
3	Melbourne	1.2	3.2	1.5	6.3	2.4	8.9	1.5	6.3	0	0	1.32	4.94
4	Curtin	1.3	6.1	0.9	4.8	0.8	2.7	0.9	4.8	0.3	1.1	0.84	3.90