

## Study of Worldwide Quality of Life 2006

Rank	City	Country	2006
1	Zurich	Switzerland	108.2
2	Geneva	Switzerland	108.1
3	Vancouver	Canada	107.7
4	Vienna	Austria	107.5
5	Auckland	New Zealand	107.3
6	Düsseldorf	Germany	107.2
7	Frankfort	Germany	107.0
8	Munich	Germany	106.8
9	Bern	Switzerland	106.5
9	Sydney	Australia	106.5
16	Berlin	Germany	105.1
28	San Francisco	U.S.	103.2
33	Paris	France	102.7
34	Singapore	Singapore	102.5
35	Tokyo	Japan	102.3
36	Boston	U.S.	101.9
39	London	UK	101.2
46	New York	U.S.	100.0
55	Los Angeles	U.S.	98.3
62	Rome	Italy	97.4
68	Hong Kong	Hong Kong/ China	95.4
78	Buenos Aires	Argentina	87.3
81	Santiago	Chile	86.5
83	Cape Town	South Africa	86.0
85	Dubai	United Arab Emirates	85.2
87	Johannesburg	South Africa	84.0
89	Seoul	South Korea	83.0
103	Shanghai	China	80.1
107	Bangkok	Thailand	77.7
108	Istanbul	Turkey	77.1
108	São Paulo	Brazil	77.1
117	Rio de Janeiro	Brazil	74.5
122	Beijing	China	73.4
128	Mexico City	Mexico	71.7
131	Cairo	Egypt	71.2
150	Mumbai	India	61.0
150	New Delhi	India	61.0
160	Chennai	India	58.3
171	Karachi	Pakistan	54.9
173	Moscow	Russia	54.8
199	Lagos	Nigeria	41.8
215	Baghdad	Iraq	14.5

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## The World's Top Ten Companies with regard to R & D Expenditures

Rank	Company	R & D expend. (in billions of US\$)	R&D as percentage of sales
1	Microsoft	7.779	21%
2	Pfizer	7.684	15%
3	Ford	7.400	4%
4	DaimlerChrysler	7.032	4%
5	Toyota	7.025	4%
6	General Motors	6.500	3%
7	Siemens	6.159	7%
8	Matsushita Electric	5.726	7%
9	IBM	5.673	6%
10	Johnson & Johnson	5.203	11%

[www.globalinnovation1000.com](http://www.globalinnovation1000.com)

## DESIGNED TO REINVENT THE WHEEL



Even renowned designer Zaha Hadid still goes to the office sometimes. Her hydrogen-powered, three-wheeled, two-seater concept has an adjustable suspension that raises and lowers the cabin, depending on driving conditions.

[www.zaha-hadid.com](http://www.zaha-hadid.com)

## OLD TO NEW



**Louis Ghost Chair by Philippe Starck:** A traditional item is transformed into something entirely new. The fusion of the traditional Louis XVI French style with contemporary elements and materials is what amazes and attracts the most.

[www.design-conscious.co.uk/mall/designconscious/products/product-829339.stm](http://www.design-conscious.co.uk/mall/designconscious/products/product-829339.stm)

## SILVER LINING



### Drop that noxious bleach!

Samsung's SilverCare Washing Machine taps the molecular structure of silver to disinfect your clothes. During the wash cycle, it electrifies two sterling silver plates, releasing silver ions into the water. The ions kill odour-causing bacteria without hot water or bleach.

[www.samsung.com](http://www.samsung.com)

## NANOTECHNOLOGY USED FOR CLEANER WATER

by Japie Schoeman



**Researchers in America recently announced the development of a new reverse osmosis membrane that promises to reduce the cost of seawater desalination and wastewater reclamation.**

Reverse osmosis desalination uses extremely high pressure to force saline or polluted water through a semi-permeable membrane. Water molecules under pressure pass through the membrane, but salt ions and other impurities cannot, resulting in highly purified water.

The new membrane uses a uniquely cross-linked matrix of polymers and engineered nano-particles to draw in water ions but repel nearly all contaminants. These new membranes are structured at the nano-scale to create molecular tunnels through which the water flows more easily than contaminants. The nano-particles attract water and are highly porous, while repelling dissolved salts and other impurities. The water-loving nano-particles in the

membrane also repel organics and bacteria that clog up conventional membranes over time.

With these improvements, less energy is needed to pump water through the membranes. The new membrane repels particles that might stick to the surface and therefore foul more slowly than conventional membranes. The result is a water purification process that is just as effective as current methods, but more energy-efficient and potentially cheaper.

Initial tests suggest that the new membranes have up to twice the productivity – or consume 50% less energy – reducing the total expense of desalinated water by as much as 25%. A critical limitation of current reverse osmosis membranes is that they are easily fouled as bacteria and other particles build up on the surface. This results in higher energy demands and leads to costly clean-up and replacement of membranes.

It is hoped that the new membrane will address the key challenges that limit more widespread use of reverse osmosis membrane technology by making the process more robust and efficient.

[Further reading: Water and Wastewater Newsletter, No. 287, 21 Nov. 2006.](#)

[www.waterandwastewater.com](http://www.waterandwastewater.com)

## MAESTRO OF THE HOUSE, WITH A REMOTE



Each unit of the Sonos Digital Music System is basically a receiver and amplifier, and all work together wirelessly from one computer – but independently – an incredible invention!

[www.sonos.com/news\\_and\\_reviews/press\\_kit/digital\\_assets](http://www.sonos.com/news_and_reviews/press_kit/digital_assets)

## STRIKING A CORD



**It's a brilliant idea: a power strip that lights up to show how much electricity your gadgets are using.**

The Power Aware cord emits a blue glow that grows more intense with the watts of electricity flowing through it. The central copper wire is wrapped in phosphor-coated strands. As electricity flows through the copper, it excites the surrounding phosphor, causing the phosphor to glow blue and increasingly brighter. When the current is switched off, the phosphor turns white.