

A Collaboration between Egypt Nanotechnology Center and IBM



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According to StatNano, Egypt Nanotechnology Center (EGNC) and IBM has demonstrated a close collaboration in developing technical knowledge and patent publication in the field of nanoscience and technology.

In recent years, International Business Machine Corporation ([IBM](#)) has published more patents in the field of nanotechnology in UPSTO than any other entity in the world. This corporation is active in software as well as hardware industries. Interestingly, [Egypt](#) Nanotechnology Center ([EGNC](#)) is one of IBM's partners in developing novel technical knowledge.

EGNC is an initiative by [Egypt](#) government established in 2008 for supporting innovative industrial research in the country. Economic growth via human resource development, producing valuable intellectual properties, and promoting industrial applications of nanotechnology is the main goal of this center. EGNC has been established jointly by Information Technology Industry Development Agency ([ITIDA](#)) on behalf of Ministry of Communications and Information Technology ([MCIT](#)), Science and Technological Development Fund ([STDF](#)) on behalf of Ministry of Higher Education, and IBM. The plan for human resource development is pursued by sending 10 Egyptian researchers to IBM's R&D center and its laboratories at Zurich in [Switzerland](#) and Yorktown in the US for 2 years. These researchers worked jointly with IBM's scientists and engineers in 5 major nanoscience and technology projects. Cairo University and Nile University can be mentioned as EGNC's academic partners. In addition, the center has scientific collaborations with Mansoura University and [Egypt-Japan](#) University of Science & Technology.

EGNC has found 28 specialized laboratories in the field of nanoscience and technology. Furthermore, the first clean room in [Egypt](#) with the area of 600 m² has been established by this center. The area of this facility has been expanded to 2000 m² in recent years. EGNC's research areas mainly include photovoltaic cells, silicon thin films, carbon-based electrodes

for solar cells, collecting solar energy for desalination, nanobiotechnology, modeling and computational simulation.

A statistical study based on Orbit databanks reveals that the first patent by EGNC in UPSTO was published in 2012. Totally, 43 patents has been registered by EGNC up to now among which 26 ones are granted and 17 other ones are published patent applications. All applications has been submitted jointly by EGNC and IBM. It is worthy to mention that this center has not registered any patent in EPO. The following table shows the number of publications by year and categories of published and granted patents.

Number of publications by year and categories of patents.

Year	Published patent applications	Granted patents	Total
2018	0	4	4
2017	0	1	1
2016	4	3	7
2015	7	7	14
2014	2	1	3
2013	6	1	7
2012	7	0	7
All	26	17	43

These patents are largely devoted to applications of [CNTs](#), [graphene](#) and hybrids of these two nanomaterials in production of solar cells, optic sensors, batteries, conductor transparent films and transistors.