# **WORLD CLEANROOM PROJECTS**



This yearly subscription includes access to a website and weekly updates covering cleanroom project activity around the world. It has sufficient detail to warrant access by the local or regional sales personnel.

The service covers activities in all countries relevant to cleanrooms for pharmaceutical, semiconductor, flat panel, aerospace, medical device, food, nanotechnology, and even new applications such as cannabis growing.

It includes cleanrooms utilized by the suppliers of consumables and hardware who need ultraclean products to deliver to their cleanroom customers.

There is a search capability for any combination of key words. So, customers and locations can be quickly identified.

The extensive weekly updates insure comprehensive and current intelligence.

An historical database of cleanrooms with displays by location, start date and operator name provide valuable background data.

This service can be combined as a package with *Cleanrooms: World Market* and or *Pharma Prospects*.

It can also be combined with market reports on products including valves, pumps, IIoT, cartridges, crossflow membranes, and treatment chemicals.



# APRIL 26 CLEANROOM PROJECTS UPDATES

# Weekly Updates insure inclusion of the latest intelligence



# Rest of the World Pharma and Biotech Projects, April 26, 2021

Cambrex Completes Major Expansion of Solid Form Screening Facility in Edinburgh

Pfizer to Halt Biosimilar Output in China, Sell Assets to Wuxi Biologics

ABN Cleanroom Technology Finishes High-Tech Omega Cleanroom

Carverian Completes Lithuanian Design & Build Project for Thermo Fisher

Stridencies Increases Sterilization Capacity with French Facility Expansion

Eisai Plans Drug Delivery Center to Support Biologics Expansion

Daimyo Medical Selects Sytira's FlexFactory Platform

Aenova Expands Sterile Production Capacity

Cytiva Diagnostics Design Lab Goes Live in China

AMPO Installed New Oxygen Service Cleanroom Facilities

MCILVAINE

Jacobs Wins Award for Cruiserath Muti Product Cell Culture Facility

Cytiva Opens Asia Diagnostics Advanced Application Center

## Eisai Plans Drug Delivery Center to Support Biologics Expansion

Completion of construction is scheduled for the second quarter of Eisai's fiscal 2022.

Eisai has started construction of a new building to support the development and manufacturing of injectable formulations. The expansion is intended to support the broadening of Eisai's focus beyond small molecules and into modalities that are delivered via injection.

Oral formulations are central to the history of Eisai, from the development of Aricept in the 1980s and 1990s through to its continued reliance on products such as Lenvima anti-cancer capsules and Banzel anti-convulsant tablets today. However, like many pharma companies, Eisai is expanding into biologics, establishing a pipeline that features 12 drugs given via injection. The Biogen-partnered Alzheimer's disease prospect aducanumab is the highest-profile antibody in Eisai's pipeline.

In drug discovery, Eisai is -----( remainder of the article is not displayed)



# USA Pharma and Biotech Projects, April 26, 2021

Navy Yard Chooses Top Engineering Firms for Life Science Hub Expansion Fujifilm Chooses North Carolina for New \$2-Billion Cell Culture Facility Nexus Moves into Wisconsin Sterile Injectable Manufacturing Facility Cytovia Inks Two Deals Covering R&D and Biomanufacturing Operations G-CON PODs Selected by Matica Biotechnology for GMP Viral Vector Facility SpectronRx Receives NRC Materials License for New Facility Rentschler and Leukocare Extend Partnership with Joint US Site Cascade Chemistry Begins Capacity Expansion



# Navy Yard Chooses Top Engineering Firms for Life Science Hub Expansion

CRB and IPS-Integrated Project Services are among the companies that have been chosen to work on the project by Philadelphia's public-private economic development corporation PIDC.

PIDC, Philadelphia's public-private economic development corporation and master developer of the Philadelphia Navy Yard, in partnership with Ensemble Real Estate Investments and Mosaic Development Partners, has announced the execution of an agreement.

The agreement provides Ensemble/Mosaic with the exclusive development rights for 109 acres at the Navy Yard and launches a \$2.5 billion development plan that will create thousands of construction and permanent jobs.

The \$400 million first phase includes the development of two advanced life sciences buildings followed by significant residential and hospitality initiatives.

It will support interior ceiling heights up to 16' ----- (remainder of article not displayed)



## Aerospace Cleanroom Updates, April 26, 2021

#### NASA Practices VIPER Moon Rover Assembly in New Cleanroom

The year leading up to this was spent turning an ordinary workspace into a controlled workspace, or cleanroom.

NASA structural engineer Aristeo Rios performs final torquing of one of the riser capture brackets during the VIPER assembly pathfinder work at NASA's Johnson Space Center in Houston in February 2021. A full-scale model of the rover will be built, securely attached to risers installed on a lift table.

NASA's water-hunting lunar robot now has a workspace prepped and ready at the agency's Johnson Space Center in Houston, where it will be built for its upcoming mission to the Moon. The Volatiles Investigating Polar Exploration Rover, or VIPER, has a new 1,000+ sq. ft. cleanroom, called the Surface Segment Integration and Test Facility, where engineers will assemble and outfit the rover.

Located in a corner of the center's Space ----- (remainder of article not displayed)



## Semiconductor Project Updates April 26, 2021

#### Intel's \$20 billion Arizona Expansion

Intel announced a substantial expansion of its Arizona-based manufacturing capacity with a \$20 billion investment – the largest private sector investment in state history. The expansion will see the construction of two new semiconductor fabrication facilities, or fabs, which will produce advanced semiconductor chips used in modern electronics.

The investment will lead to the direct creation of 3,000 new high-tech, high-wage jobs and 3,000 construction jobs, while supporting an estimated 15,000 additional indirect jobs in our community.

"Today's announcement means jobs, jobs, and more jobs for the state of Arizona," said Governor Doug Ducey. "It also proves once again that Arizona is at the cutting-edge of advanced chipmaking and manufacturing. No company has been such an instrumental partner in Arizona's growth and transformation over the years as Intel, and ---(remainder of article not displayed)





# **INSTANT SEARCH FOR ANYTHING IN LAST 20 YEARS**

You can search by any combination of of keywords such as prospect name, location, and date

# SEARCH SEMICONDUCTOR

# When you search on China and Semiconductor more than 1000 results found in 100 pages of displays

#### Foxconn Breaks Ground for New Chip Plant in China

Foxconn Electronics (Hon Hai Precision Industry) recently broke ground for an advanced semiconductor assembly and test plant in Qingdao, northeast China.

Foxconn plans to invest a total of CNY60 billion (US\$8.6 billion) in the new plant project, according to sources familiar with the matter. China's state-backed Rongkong Group will be co-financing the project.

Foxconn's new Qingdao plant will be dedicated to providing advanced packaging technologies, such as fan-out, and wafer-level bonding  $\bullet$  and stacking, for chip solutions for use in 5G and AI related device applications, sources indicated. The plant will be ready for production in 2021 and scale up its output to commercial levels by 2025.

Foxconn's new advanced backend plant in Qingdao is designed for monthly capacity of 30,000 12-inch wafers, the sources said.

Foxconn in 2017 set up a semiconductor subgroup to consolidate resources to grow its semiconductor business. The new Qingdao plant is believed to be part of Foxconn's efforts to strengthen its deployments in the semiconductor field.

Over the past two years, Foxconn struck deals with China's local governments in Zhuhai, Jinan and Nanjing regarding its participation in the local chipmaking sectors.

## Search Semiconductor Projects by Headline

SK Hynix's New M16 Plant Stands Ready

TSMC to Spend Big on 3nm Development

**SUSS MicroTec Opens New Production Facility in Taiwan** 

**ITRI and DuPont Inaugurate Semiconductor Materials Lab** 

**DISCO's Completion of New Building at Nagano Works Chino Plant** 

Entegris Invests in New Manufacturing Facility in Taiwan

**Beneq Completes New Cleanroom Facility** 

Tyntek to Start 6-Inch Wafer Production

Kioxia to Construct New 3D NAND Fab by Early 2022

China DRAM Maker Moves in Equipment at 12-Inch Fab

**<u>RIT to Upgrade Semiconductor and Microsystems Fabrication Laboratory</u>** 

JSR Plans Big Electronic Materials Facility in US

Funding for New Centre for Integrative Semiconductor Materials Announced

Edwards Celebrates Grand Opening of New 'Green' North America Semiconductor Technology Center

<u>in Hillsboro</u>

**Chinese Electronics Company JCET Begins High-Volume Wafer Bumping** 

Micron Unveils New NAND Fab in Singapore

Minnesota Chipmaker Skywater Finishes Addition Construction

Sheaumann Laser Opens New Semiconductor Laser Facility

**CSconnected Project Receives £25.44M Funding** 



# **SEARCH BY OPERATOR - FUJIFILM**

You can search by relevance or by date to see all the Fujifilm displays



# 49 Articles on Fujifilm are Displayed

#### Fujifilm to Invest to Build Large Scale US Cell Culture Facility

Tokyo headquartered, Fujifilm Corporation, has announced a new US\$2bn (£1.4bn/€1.5bn) investment to establish a new large-scale biopharma site in the US.

The facility will be operated by its subsidiary, Fujifilm Diosynth Biotechnologies, which has locations in Teesside, UK, in North Carolina and Texas in the US and in Hillerød, Denmark.

The move serves to further underline Fujiflim's ambitions within the contract development and manufacturing (CDMO) space, following its US\$928m investment, announced last year, to expand its site in Hillerød, Denmark, and the capital it is ploughing into its UK and US facilities.

This latest investment, it said, will significantly expand Fujifilm's capacity for process development and manufacturing of antibodies, recombinant proteins, gene therapies and vaccines.

"Through this large investment in the US, we are able to support the development and manufacturing of new drugs that can help fulfill unmet medical needs," commented Kenji Sukeno, president of Fujifilm Corporation.

The idea is that the new facility will become an end-to-end single-site solution.

It will offer large-scale cell culture manufacturing of bulk drug substance with eight 20,000L bioreactors, with the potential to expand and add a further 24 bioreactors of that volume based on market demand.

In addition to drug substance manufacture, the plant will also provide commercial scale, automated fill-finish and assembly, packaging and labeling services, said the company.

The new facility will be built within the vicinity of an existing Fujifilm site, and is not scheduled to become operational before the spring of 2025.

Fujifilm has set a target to achieve an annual revenue of US\$2bn for its bio-CDMO business by March 2025.

By March 2026, the company said it expects this latest investment to boost the annual growth rate of its bio-CDMO business to 20%, greatly exceeding market projections.



# **SEARCH BY PRODUCT - ISOLATOR**

**270 Articles on Isolators** 



# Telstar completes Design, Manufacture and Validation of Thirteen Isolators for Ipsen Biopharm

Telstar has completed design, manufacture and validation services of a complex suite of thirteen isolators.

Comprising seven production isolators and six quality control (QC) lab isolators, the complex achieves containment levels of 0.2ng/m<sup>3</sup> (200 picograms). It is specially designed to provide both operator protection from accidental release of the high-potency recombinant proteins and product protection from external contamination.

Developed for IPSEN Biopharm, the isolator package is installed in a recently upgraded cleanroom facility located in the Wrexham manufacturing site.

The set of 13 isolators were designed with a once-through airflow regime and include safe change inlets and exhaust filters integrated within the cleanroom in a very restrictive area. They are also connected to a dedicated heating, ventilation and air conditioning (HVAC) system. This proved a technical challenge for the Telstar team, which worked closely with the building contractors on site to successfully achieve the requirements of the client.

The isolators shared many common design details favored by the client from Telstar's previous contract with the client. These details included clamped visor frames to provide a more robust gullwing design to provide support to larger-than-normal dimensional visors, and panel filters with safe change housings to provide the necessary increased flow rate but also enable the filters to be safely changed in and out locally without risks of secondary exposure.

In addition, contained transfer ports were included to maintain the low-level occupational exposure limit during transfer of product and removal of liquid and solid waste from the isolators. The equipment has now been successfully commissioned and tested in accordance with the principles of good manufacturing practice (GMP) for pharmaceuticals as set out by the International Society for Pharmaceutical Engineering (ISPE) Baseline Guide for Commissioning and Qualification Volume 5.



# **SEARCH B Y SUPPLIER**

### **Examples for Wiskind and Cleanroom Solutions**



# Wiskind Assists Moscow R-Pharm to Build Covid-19 Vaccine Plant

Moscow-based "R-Pharm" will become a leading manufacturer of Russia's Sputnik V covid-19 vaccine.

On December 11, 2020, Moscow Mayor Sergei Sobyanin and R-Pharm Chairman Alexey Repik checked the progress of the production of the vaccine against Covid-19 in the Moscow plant. The project is being developed by R-Pharm. Wiskind provided more than 430,400 sq. ft. (40,000 square meters) of rock wool cleanroom panels, cleanroom doors and other cleanroom enclosure products for the project.

The production base will produce the flagship home vaccine "Sputnik V" developed by the Epidemiology and Microbiology Centre. According to this project, when the factory reaches full capacity, it will produce up to 20 million doses of vaccine every month. The total investment in the project amounts to 8.6 billion rubles.

The R-Pharm enterprise plans to start at the end of December 2020, and the first batch of Sputnik V vaccines are planned to be produced in Moscow Technopolis in January 2021. The construction of the complex located on the territory of the special economic zone "Technopolis "Moscow" took place in record time, which is necessary for the implementation of national and urban vaccination programs. The area of the new factory will exceed 215,200 sq. ft. (20,000 sqm.)



# ISO Class 8 Mask Production Facility Built in Wales by Cleanroom Solutions

The urgency of pandemic builds means extremely tight turnaround demands for design and build providers. An example of this is the new 4,573 sq. ft. (425 sqm) cleanroom in Wales that aimed to produce high grade face coverings and masks for front line workers.

The COVID-19 pandemic and the new government advice/rules on mandatory face coverings has seen a huge rise in demand for face masks. But how can the UK government satisfy such a large and sustained increase in demand without impacting on the supply of face masks for the countries front-line National Health Service (NHS) staff? The answer: build new state of the art facilities in accelerated time frames.

One such facility is located at British Rototherm, in Port Talbot, Wales. Cleanroom Solutions was tasked with the design and build of the brand new, 4,573 sq. ft. (425 sqm) cleanroom.

The facility is an ISO Class 8 cleanroom to ISO 14644-1, which is required for production of high-grade face coverings and masks for front line NHS workers. The cleanroom included changing room and goods in/out airlock for production materials. The facility was fully air-conditioned for comfort conditions.

Due to the extreme urgency of the build and difficulties getting construction materials at short notice, the build program had to be modified. The walls were erected before the steelwork and temporally supported until the steelwork was delivered and constructed.

The walls were then connected to the steelwork, and this was followed by the suspended ceiling. As soon as a section of ceiling was in place, a second team began working on fitting the fan filter units (FFUs) and lights. Finally, the vinyl floor was laid, enabling the client to start to move their production equipment in. Whilst the equipment was being installed the ceilings were sealed and the room tested and validated.





#### **Historical Database of Cleanrooms**

For a 25-year period of 1993 to 2018 there is a display of projects by start date location, and other useful parameters. Since most new cleanrooms are operated by companies which already have existing cleanrooms, this historical record is of considerable value.

Location	City	Project Title	SIC Description	Product
	Ireland / France / Belgium	Tyndall National/ CEA-Leti/ imec / ASCENT(Access to European Nanoelectronics)	Electronic Components	electronic nanotechnology
Australia	Derrimut, Melbourne	Fresenius Kabi	Pharmaceuticals	pharmaceuticals
Australia	Mulgrave	<u>Hospira</u>	Pharmaceuticals	injectables
Bahrain	Salman Industrial City	Gulf Biotech	Pharmaceuticals	pharmaceuticals
Belgium	Leuven	<u>Ovivo / imec</u>	Semiconductor	nanoelectronics / semiconductor research
Canada	Edmonton, Alberta	<u>Northern Alberta Institute of</u> <u>Technology (NAIT)</u>	Nanotechnology	technology
Canada	Toronto	<u>Green Earth Nano Science</u> (GENS)	Nanotechnology	green environmental technologies
Chile	Santiago	Pfizer	Pharmaceuticals	pharmaceuticals



#### Search Arizona Projects by Start Date

There are 89 projects displayed dating back to 1989

tartup Date	
Unknown	
Unknown	
unknown	
Unknown	
Online	
2014	
2013	
2012	
2012	
2012	
2012	

City	Project Title	Revision Date
Arizona State University Research Park	Motorola-22	9/1/1997
Gilbert	Materials Research Corp1	7/1/1995
Phoenix	ABPAC	6/1/2001
Chandler	Amkor Electronics	1/1/1996
Mesa	MGC Pure Chemicals America	10/1/1997
Tucson	<b>Opto Power Corporation</b>	2/1/2000
Phoenix	Flip Chip Technologies	4/1/2008
Tempe	VLSI Technology-1	
Scottsdale	Flow Dynamics	4/1/2000
Tempe	Galvin Industries, Inc.	
Fort Defiance	General Dynamics Plant	
Scottsdale	<u>Gentron</u>	9/1/1995
	<u>University of</u> <u>Arizona/Center for</u> <u>Microcontamination Cntl.</u>	
Phoenix	Maxwell Paper Products	2/1/1999
Mesa	Motorola-28	9/1/1997
Phoenix	ASM America	
Mesa	Apple	12/13/2013
Tucson	Accelr8	10/11/2012
Phoenix	Dedicated Phase I (DPI) / Integrated Medical Services (IMS)	2/24/2011
Surprise	<u>Gestamp Solar Steel (GSS)</u>	4/18/2011
Chandler	Avnet	9/10/2012
Phoenix	<u>GateWay Community</u> <u>College</u>	

