



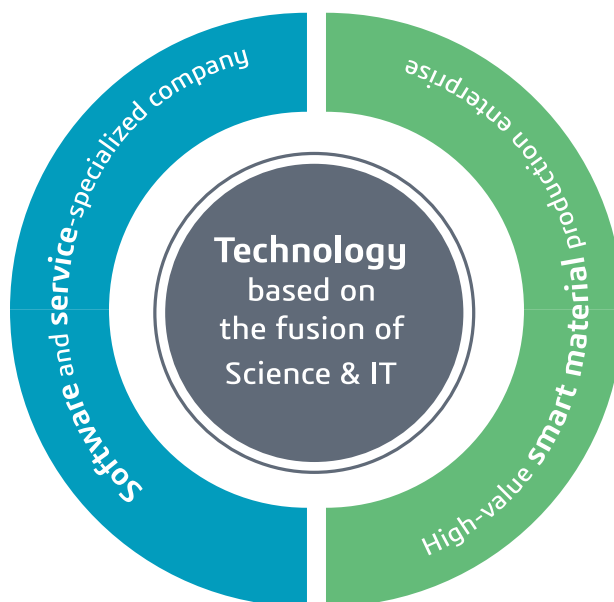
NEW WAYS  
TO NEW MATERIALS

DASSAULT SYSTEMES CONSULTING

FUNCTIONAL MICROCAPSULE

WATER REPELLENT AGENT

BIOLOGICS



Insilico adopts C of Chemistry as its symbol mark. It symbolizes chemical molecules and visually conceptualizes the docking of two chemicals by molecular modeling. Therefore, it connotes the aspiration and will of Insilico to leap into the world market as a global leader in chemical, bio, material engineering and software industry.

# CONTENTS



ABOUT COMPANY

04



COMPANY HISTORY TIMELINES

06



INTELLECTUAL PROPERTY

08



CONTRACT RESEARCH SERVICE

09



DASSAULT SYSTEMES CONSULTING

10



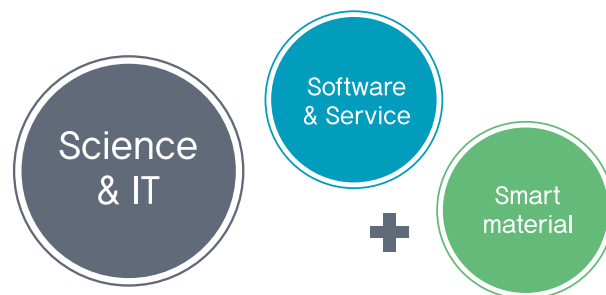
FUNCTIONAL MICROCAPSULE

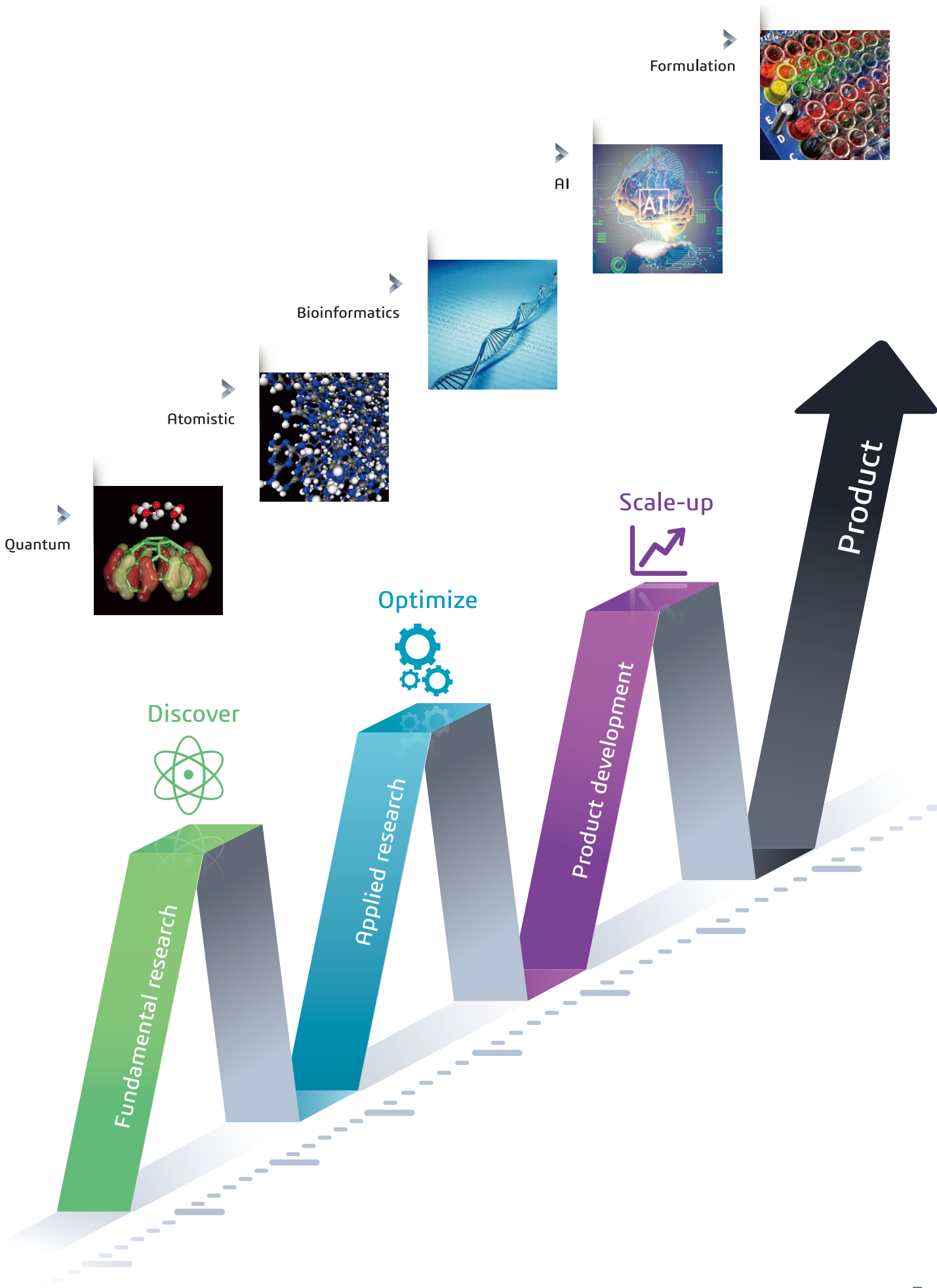
12

# ABOUT COMPANY

A high-value chemical company that develops and produces new materials at a low-cost and high-performance on the basis of fusion technology of chemistry and IT (molecular modeling and artificial intelligence\*) and also develops related software and provides consulting services.

\*It is an innovative experiment methodology that enables the development of a new material at a low-cost and high-performance in a short period. It uses computer-based virtual screening to select out chemicals that can be effective for a certain purpose before actual experiment. Molecular modeling technique has been utilized for the development of various new materials for functional additives, polymer, catalyst, storage substance and battery, bio, pharmaceutical and acknowledged as an effective and certified method.



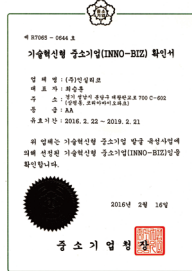


# 2002

- Foundation of Insilicotech Co. Ltd. 🏢



- Certified as a Company affiliated R&D Institutes 🏢
- Certified as a Venture Company 🏢



- Certified as an official INNO-BIZ Company 🏢



- Acquired Polychrom Co. Ltd. as a subsidiary 🏢
- Awarded One million Tower Industrial Award from president of Korea 🏢

2002

2003

2007

2009

2013

# COMPANY HISTORY TIMELINES



- Certified as an ISO 9001:2008 🏢

# 2019



- Winning an award of the Ministry of Science, ICT and Future Planning 🏢
- Certified as an ISO 14001:2004 🏢



- Certified as a Korean World-class Product Award from MOTIE 🏢



- Awarded three million Tower Industrial Award from president of Korea 🏢



- Move to smart office located in Banwol Industrial Complex in Ansan 🏢
- Certified as an IP Management Enterprise from KIPO 🏢
- Certified as a Global Leading Company from KICOX 🏢

2014

2016

2017

2018

2019

- Changed company name to Insilico Co. Ltd. (New unified company from Insilicotech Co. Ltd. and Polychrom Co. Ltd.) 🏢

- Certified as an Small Giant Company from MSS 🏢
- Performing the continuous research and development for the discovery of new items 🏢

# INTELLECTUAL PROPERTY

## Selected Publications

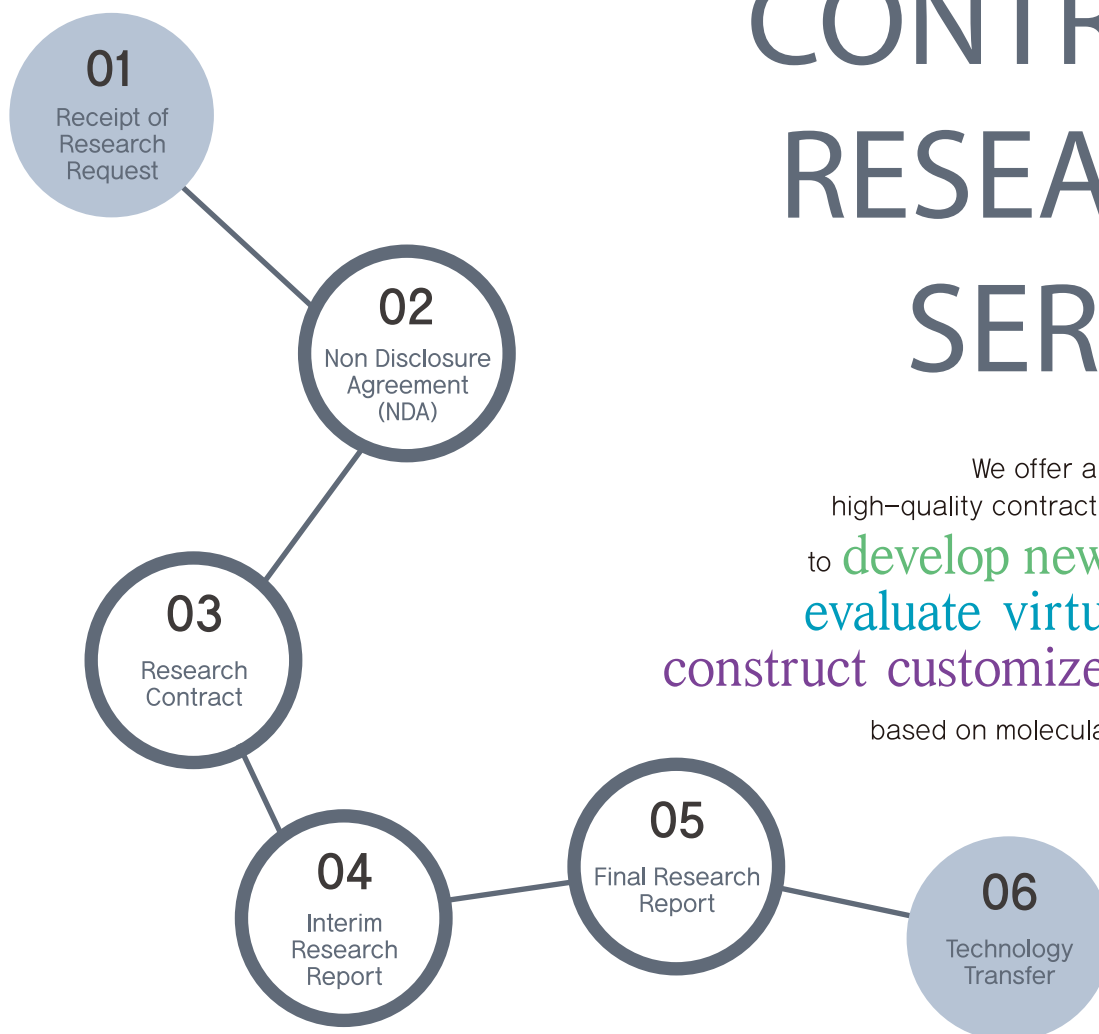
- Benchmarking of computational approaches for fast screening of lithium ion battery electrolyte solvents, *Chem. Phys. Lett.*, 681, 64 (2017)
- Thermostable artificial solid-electrolyte interface layer covalently linked to graphite for lithium ion battery : molecular dynamics simulations, *J. Electrochem. Soc.*, 63, 6 (2016)
- Wettability of ag nanocluster on cu ni alloys: a computational approach, *J. Alloys Compd.*, 682, 844 (2016)
- Thermostable artificial solid-electrolyte interface layer covalently linked to graphite for lithium ion battery: molecular dynamics simulations, *J. Electrochem. Soc.*, 63, 6 (2016)
- Temperature dependence of volume change of naX and naY zeolites using molecular dynamics simulations, *J. Phys. Chem. C*, 118, 12811 (2014)
- The effect of stacking fault on diffusion of chemisorbed hydrogen atoms inside few-layered graphenes, *RSC Advances*, 4, 9223 (2014)
- Negatively curved carbon as the anode for lithium ion batteries, *Carbon*, 66, 39 (2014)
- Theoretical study on porphyrin based covalent organic polyhedra as a hydrogen storage, *Int. J. Hydrogen Energ.*, 38, 6234 (2013)
- Liquid-like hydrogen stored in nanoporous materials at 50 K observed by in situ neutron diffraction experiments, *J. Phys. Chem. C*, 117, 3177 (2013)
- Identification of tissue-specific targeting peptide, *J. Comput. Aided Mol. Des.*, 26, 1267 (2012)
- Pillared covalent organic frameworks with balanced volumetric and gravimetric hydrogen uptake, *J. Phys. Chem. C*, 116, 1479 (2012)
- Machine learning study for the prediction of transdermal peptide, *J. Comput. Aided Mol. Des.*, 25, 339 (2011)
- Density-based clustering of small peptide conformations sampled from a molecular dynamics simulation, *Journal of Chemical Information and Modeling*, 49, 2528 (2009)
- Crystal structure and guest uptake of a mesoporous metal-organic framework containing cages of 3.9 and 4.7nm in diameter, *Angew. Chem. Int. Ed.*, 46, 8230 (2007)
- Grand canonical monte carlo simulation study on the catenation effect on hydrogen adsorption onto the interpenetrating metal-organic frameworks, *J. Phys. Chem. B*, 110, 22987 (2006)

## Selected Patents

- KR 10-2019-0011143, Method of extraction of silicone emulsion and fabric using it
- KR 10-2018-0131452, Recommendation method of material formulation using artificial intelligence and apparatus using thereof
- KR 10-2018-0113732, Thermochromic composition and thermochromic microcapsule comprising the same
- KR 10-2017-0125868, , A method for promoting the production of bacteriocin in lactic acid bacteria
- KR 10-1422048, Synthetic method and application way for multifunctional coating composition containing the random copolymer made up of the organic silicon polymer copolymer having amidogen
- KR 10-1378673, New Lactobacillus plantarum strain, the Method of isolating the strain and Composition for prevention and treatment of colibacillosis using it
- KR 10-1083410, Manufacturing method of phytoncide microcapsule whose transparency has been improved
- KR 10-0478477, Manufacturing method for the functional micro capsule to which the silver nanoparticles adhered
- US 8093350, Coordination polymer crystal with porous metal-organic frameworks and preparation method thereof
- US 8692020, Organic framework
- US 8604230, Porous crystal structure with ammoniaborane chemically connected and preparation method thereof
- US 12/513,279, System, method and program for pharmacokinetic parameter prediction of peptide sequence by mathematical model
- EP 07 851 169.8, Coordination polymer crystal with porous metal-organic frameworks and preparation method thereof
- EP 1458472, Method of preparing functional microcapsule incorporating silver nanoparticles
- JP 5451766, Organic framework

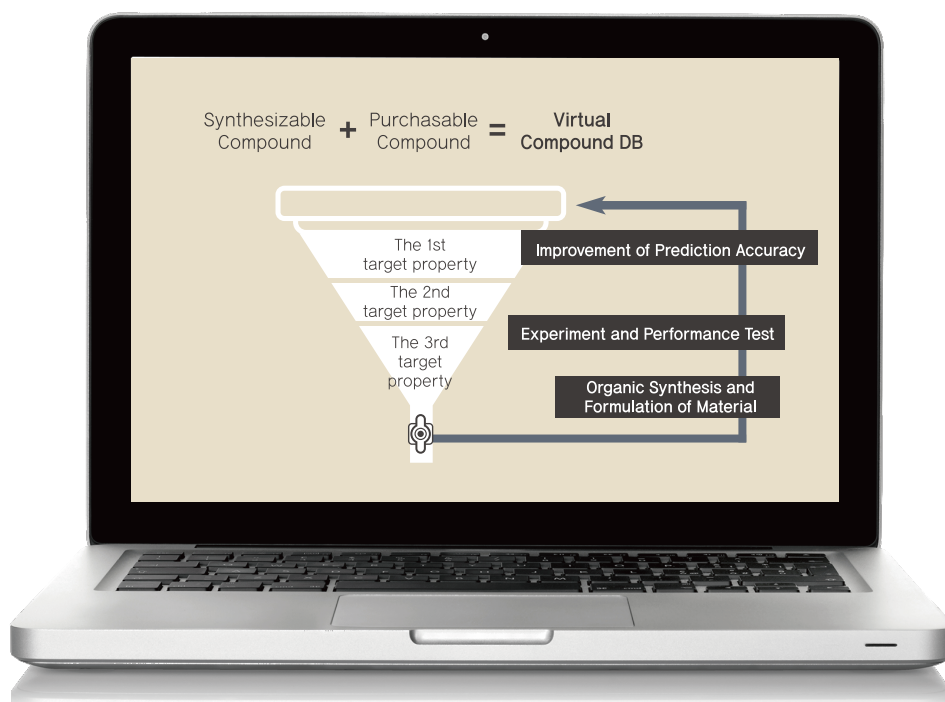


# CONTRACT RESEARCH SERVICE



We offer a complete range of high-quality contract research services to **develop new material**, **evaluate virtual library**, **construct customized solution**

based on molecular modeling and AI.



Our customers can develop new materials at a low-cost and high-efficiency way through professional staff, software and clustering computer. We help customers screen out candidate chemical compounds suitable for their purpose from a massive compound DB, which is based on molecular modeling and artificial intelligence. Therefore, our customers can easily narrow down the number of compounds to actually experiment and find a new direction of designing compounds. Screening filter at each virtual screening process is most reliable and fastest, so our customers can search out an optimal set of compound candidates quickly and easily.

# DASSAULT SYSTEMES CONSULTING



3D

Dassault Systems (3DS) is a world-leading company in 3D design, analysis simulation and intelligence software with over 190,000 customers and 12,000 employees.

01



3DS BIOVIA provides the functions necessary for overall scientific data management covering biology, chemistry, molecular modeling and simulation, research management, and QC.

02

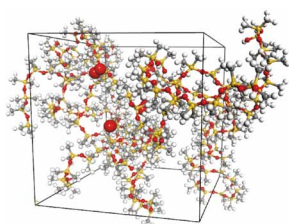


3DS BIOVIA solutions create an unmatched scientific innovation environment that can help science- and process-driven companies develop better products faster and more cost effectively.

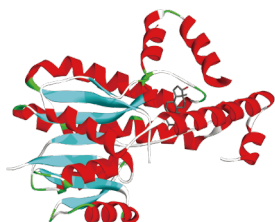
03

We provide solution sales and technical consulting service on Dassault Systems solution in Korea.

# BIOVIA SOLUTION PORTFOLIO



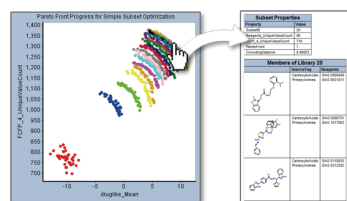
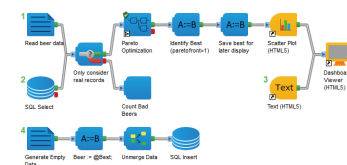
**BIOVIA Materials Studio** is a molecular modeling solution for chemistry and new materials. This makes it possible to predict and analyze the properties of materials without additional experimentation. This is the optimal solution for computational chemists in general chemistry and materials science to model professionally.



**BIOVIA Discovery Studio** is a modeling solution that enables the development of new drug research, from project planning to advanced material optimization, in an integrated modeling environment that is easily accessible to pharmacy chemists.

**BIOVIA Pipeline Pilot** offers powerful and versatile capabilities for scientific analysis.

It automates and standardizes tasks such as manual and repetitive data preparation and data post-processing or provide an optimal research innovation process environment. It also provides GUI\*, allowing non-developer researchers to analyze data quickly and easily.



\* GUI: Graphic User Interface

## Modeling & Simulation

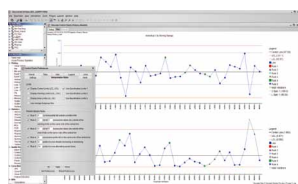
## Manufacturing Process Analytics



3DEXPERIENCE

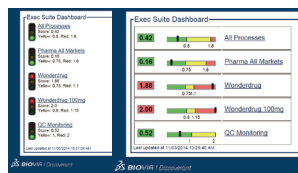
## Data Science

## eDMS / eQMS

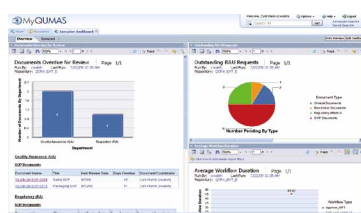


**BIOVIA Discoverant** is a manufacturing process information management solution that integrates unique data modeling techniques with powerful analysis techniques.

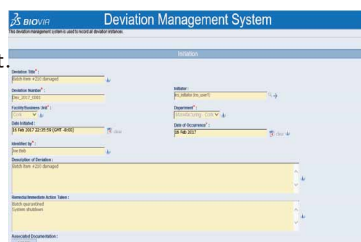
It is an innovative solution that allows users who need process analysis to access, analyze and report process data in real time.



**BIOVIA QUMAS EDMS** is a solution for electronic document management and compliance. It consists of R&D package and QA package, so you can choose the package to suit your purpose.



**BIOVIA QUMAS EQMS** is a solution for quality management. It consists of Complaint, CAPA, Audit, Diviation, and Change Control packages and can be used in conjunction with the EDMS package.



# FUNCTIONAL MICROCAPSULE

Thermochromic·Photochromic Microcapsule /  
Bichrom Microcapsule / Erasable Microcapsule /  
Aroma Microcapsule / Functional Microcapsule

[www.insilico.co.kr/chemical](http://www.insilico.co.kr/chemical)

## Functional Microcapsule

Microcapsule is a micro ( $\mu\text{m}$ )-sized granulated capsule with the purpose of protecting essential material or controlling the releases of it by wrapping essential material with a certain high molecular substance.

With excellent technology and quality,  
we manufacture new functional microcapsules.

- Product Type : Powder (Oil-based),  
Slurry (Water-based)
- Application: Textile, Coating & Printing, Plastic Injection,  
Ink, Paper, Supplies, Toy, Stationary, Film



Strong color density



Stable dispersion



Quick response time



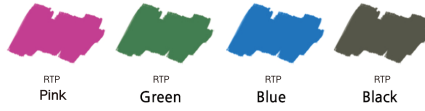
BPA Free



Low Formaldehyde

# COLOR CODE

## Reverse



## Chameleon T



## Bichrom T



## Spyball

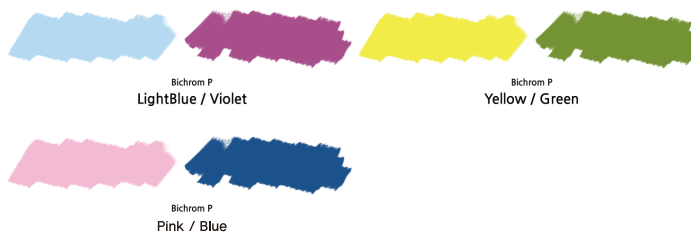


## Chameleon UVC

### Polyshine



## Bichrom P





Thermochromic Microcapsule



Erasable Microcapsule



## Thermochromic Micocapsule [Chameleon T Series](#)

This is a microcapsule product with a special thermochromic dye, which changes color according to temperatures. The thermochromic dye causes the change of color by the heat-induced chemical structure change.



## Erasable Micocapsule [SpyBall](#)

SpyBall is a kind of thermochromic capsule with the color disappearing or reappearing in response to temperature variation. The color disappears at a certain temperature or above and reappears at a certain temperature or below.



## Reverse Thermochromic Micocapsule [Reverse Thermochromic Series](#)

Reverse thermochromic microcapsule is a product with thermochromic dye, which reveals its color according to increasing temperature. When the heat is applied, the color appears. When it cools again, the color disappears.



## Photochromic Micocapsule [Chameleon UVC Series](#)

This is a microcapsule product with a photochromic dye which changes its color by light. The photochromic dye causes color change reversibly by light. When it is exposed to ultraviolet rays (sunlight), it causes color formation, and when a light is blocked, it has its original color.



## Bichrom Micocapsule [Bichrom T / P Series](#)

Bichrom dye features the change of color by the structural change in specific conditions. Bichrom T or Bichrom P series changes from color to color depending on the temperature or light.



## Aroma Micocapsule [AromaBall](#)

AromaBall is a product created in the process of making fat-soluble liquid aroma micro-encapsulated to increase scent durability. By solidifying the fragrance of the liquid, it can be used in various forms to suit the purpose of the user.



## Vitamin E Micocapsule [BioBall](#)

Vitamins are essential for beauty and physical health. BioBall was developed in the way of applying microcapsule technology to vitamins.



## Thermal Storage Micocapsule [ThermoBall](#)

ThermoBall is a microcapsule product that contains phase change material (PCM). The functional product absorbs heat as surrounding temperature goes up, and slow releases it as the temperature goes down.

[www.insilico.co.kr](http://www.insilico.co.kr)

**Insilico. Co. Ltd.**

10B-12L, Banwol Industrial Complex,  
112-19, SanDan-Ro, DanWon-Gu,  
Ansan-Si, Gyeonggi-Do,  
15434, Korea

Tel. +82 31-495-6932

Fax. +82 31-495-6632



## **With excellent technology and quality, we focus on R&D to develop new and better materials.**

Insilico is a high-value chemical company that develops and produces new materials at a low-cost and high-performance on the basis of fusion technology of chemistry and IT and also develops related software and provides consulting services. We realizes a new innovation of epoch-making cooperation environment in the entire processes from material designing by molecular modeling, laboratory, manufacturing to quality control. As R&D-oriented company to develop new fields, we are actively involved in the development of materials of advanced concept and high technology on the basis of "excellent human resources" and "stable organization". Based on our technology that has been accumulated through consistent investment, R&D and superior product quality, we are preoccupying both domestic and overseas functional microcapsule product market. Recently, we have succeeded in developing an environment-friendly and fluorine-free textile water repellent and expanding our markets. For more information, visit [www.insilico.co.kr](http://www.insilico.co.kr)