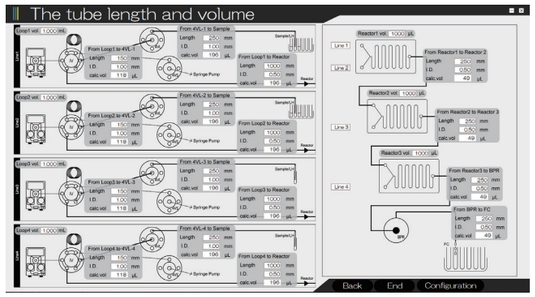
DFC
Device for Flow Chemistry

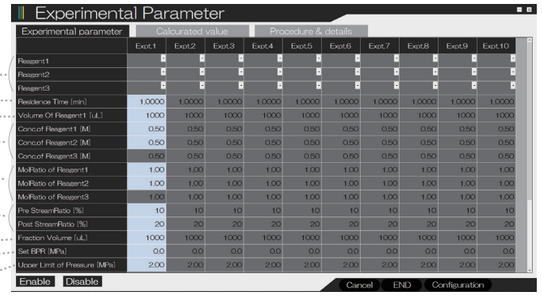
Software (Last part: Synthesis Conditions Detailed Parameter Input)

Refer to the synthesis conditions for batch synthesis before entering the reaction conditions, such as reagent concentration, amount, and reaction time.

5. Componential parameters
Enter the reactor capacity, loop capacity, and piping length.



6. Experimental parameter
Enter specific test values



Sample selection
Reaction time
Reagent 1 usage amount [µL]
Reagent concentration [M]
Reaction ratio
Pre/Post collection amount. (Easy mode)
Fraction collector capacity [µL]
Back pressure [MPa]
Upper limit pressure [MPa] (Emergency stop)

Selecting the Easy or Advanced collection mode enable a wide range of needs from drug discovery research to process review.

Target product synthesis is completed. It's optimal for multiple different small-quantity sample synthesis.

Compact size that can be placed inside the draft.

Example configuration / Sale price, Specifications

	3Line Sys C / Sys B / Sys B	2Line Sys B / SysB	2Line Sys A / SysA
Plunger Pump (PP)	3	2	2
Injection Valve (IV)	3	2	2
Automatic Back Pressure Valve (ABPR)	1	1	1
Fraction Collector (FC)	1	1	1
Syringe Pump (SP)	2	1	-
1-4 Way Valve – Syringe Pump Side (4VS)	3	2	-
1-4 Way Valve – Sample Side (4VL)	3	2	-
Liquid Handler (LH)	1	-	-
Control Box	2	1	1
Automatic Synthesis Software	1	1	1
Device Size	W1300×D600×H680mm	W650×D600×H680mm	W650×D600×H340mm
Price	From 10,420,000 yen	From 5,980,000 yen	From 3,620,000 yen

Reactor sold separately. Shipping, handing, and other miscellaneous costs not shown.

	Specifications	Remarks
PP flow speed setting range	0.01 ～ 9.999ml/min	Calculate from reaction time
Minimum reagent usage amount	500 µL ～	
Syringe – Loop capacity	2.5ml-1ml、12.5ml-5ml	
ABPR setting range	0.1 ～ 1.5MPa	
LH	24well、96well	Supports specially ordered racks
FC	Test tube x 71 (standard)	Supports specially ordered racks

DFC
Device for Flow Chemistry

DFC Co.,Ltd ／ Device for FlowChemistry

Uji Bencha Kigyo Ikusei Kojo Bldg. No.2,
1-25 Nishinohata Okubocho, Uji-shi, Kyoto 611-0033
MAIL info@dfc-kyoto.co.jp URL http://dfc-kyoto.co.jp/

Scientific equipment product development and sales

Field

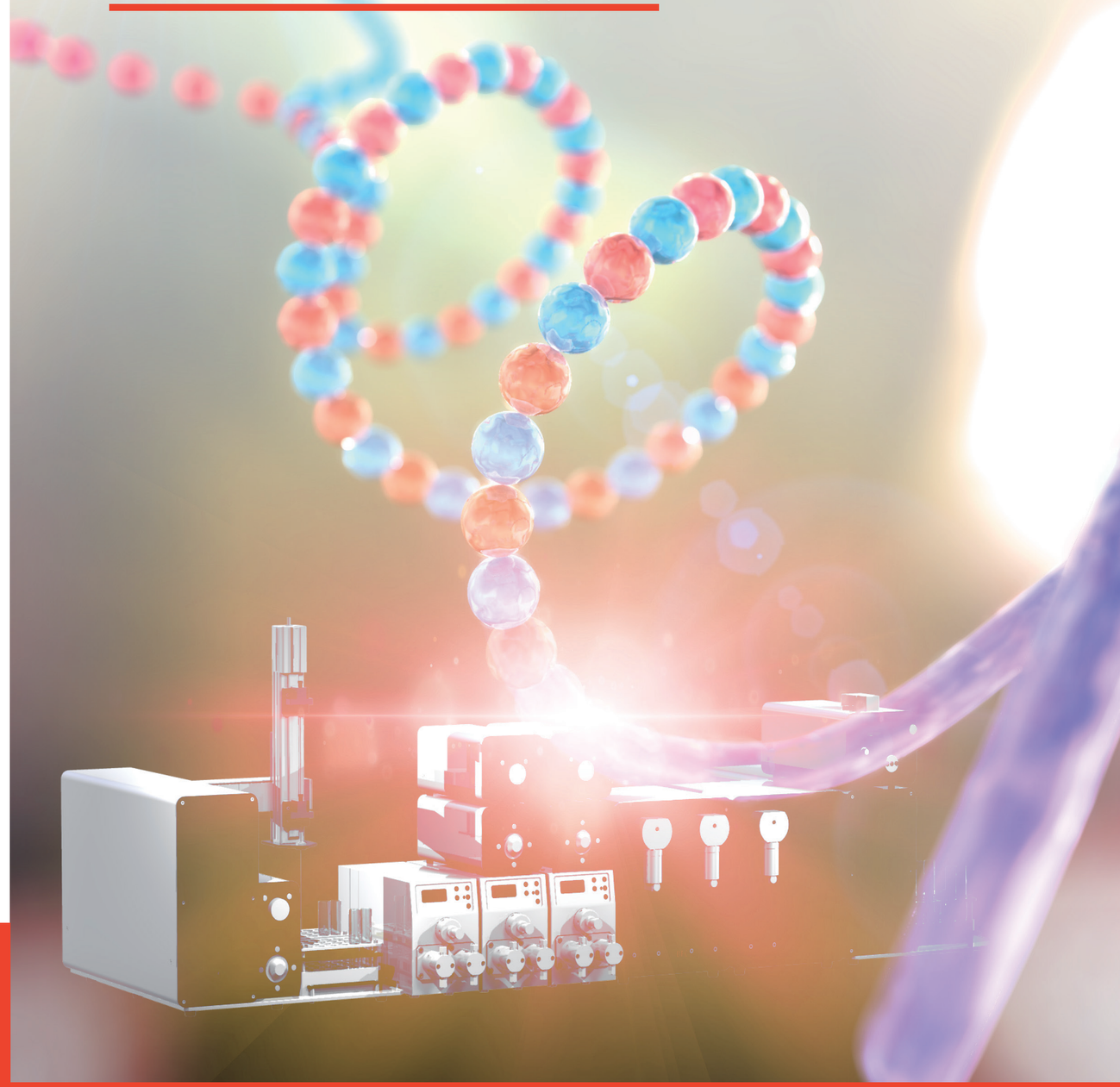
Flow chemistry
HPLC (liquid chromatography)
Other (scientific equipment)

DFC
Device for Flow Chemistry

Optimal for research and development in medicinal chemistry
Supporting the synthesis of multiple different small-quantity samples

OptimFlow

Optimized for synthesis



DFC
Device for Flow Chemistry

➜ Background behind the need for automatic synthesizers

Pharmaceutical manufacturer	Drug development costs are increasing annually and there is a great demand for automation which greatly reduces labor costs.
Existing automatic synthesis equipment	✖ Expensive ✖ Complex and hard to use ✖ Imported

Jointly developed with 4 pharmaceutical companies and the Nard Institute!

Overcome the issues of existing automatic synthesis equipment with

OptimFlow

Equipment configuration

Configured in a maximum of 4 lines. (3-stage reaction with 4 channels and 3 reactors)

Sampling line systems

Sys A: Manual sampling (Reagent is manually introduced to the loop. Measured using the IV)

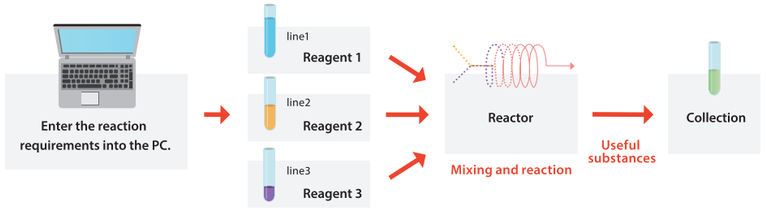
Sys B: Automatic sampling using the SP (channels switched using the 4VS/4VL)

Sys C: Multiple types of sample synthesis are possible using the LH.

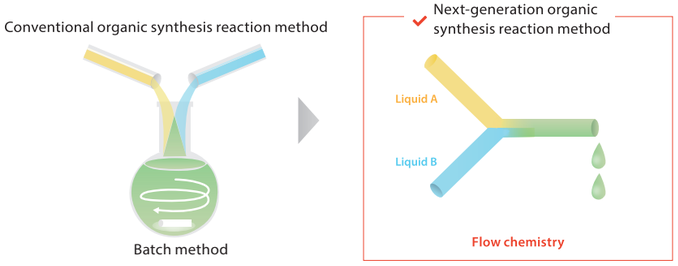
➜ Equipment Overview

Automated synthesis without manual calculation | **Intuitive synthesis software** | **Supports a maximum of 4 channels and 3 reactors**

Load the reagent and start up the synthesis software to automatically conduct everything from the required pre-processing and time adjustment to the cleaning.



Just input the conditions, such as the reagent concentration, ratio, and reaction time and then apply the flow synthesis. (No calculations are required.)



Flow chemistry for all chemists

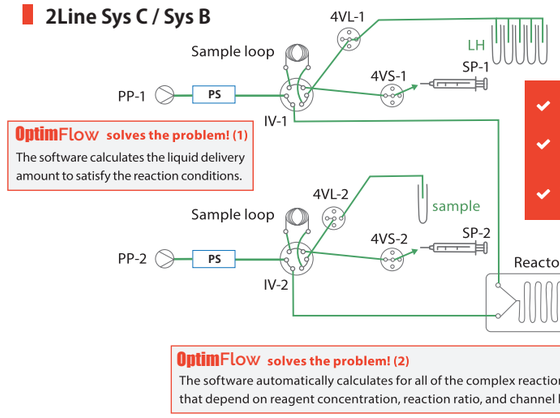
Our software is easy for chemists to use.
It does not require calculations, process engineering, or programming.

Conventional flow chemistry equipment required a ton of knowledge and know-how, making it challenging for researchers specializing in organic synthesis.

The equipment must be controlled based on the calculated values, but this is very complex.

With our new equipment, you only need to do is enter the reaction requirements and the software takes care of all the complex calculations.

2Line Sys C / Sys B



OptimFlow solves the problem! (1)
The software calculates the liquid delivery amount to satisfy the reaction conditions.

OptimFlow solves the problem! (2)
The software automatically calculates for all of the complex reactions that depend on reagent concentration, reaction ratio, and channel length.

OptimFlow solves the problem! (3)
The synthesized substances are collected without waste. The user can perform divided collections using synthesized substance product distribution.

OptimFlow solves the problem! (4)
The LH can handle a maximum of 192 samples.

- ✔ The system configuration can be visually checked and altered .
- ✔ Continuous automated synthesis under a variety of conditions.
- ✔ The synthesis process can be seen at glance.

PP: Plunger Pump
ABPR: Automatic Back Pressure Value
4VS: 1-4 Way Valve – Syringe Pump Side
PS: Pressure Scale
FC: Fraction Collector
4VL: 1-4 way Valve – Sample Side
IV: Injection Valve
SP: Syringe Pump

Intuitive software (First half: Synthesis pattern selection)

Follow the navigation to select the flow synthesis type.

1. Launcher

- Componential Parameter input
- Experimental Parameter input
- Start the synthesis program

2. Componential parameter Reaction type

Select the reaction type (number of lines/number of reactors)

3. Componential parameter Components

Select the system (SysA/SysB/SysC) for each line.

4. Componential parameter Other components

Select the components of the ABPR,etc