



EQUIDER : THE LATEST TECHNOLOGIES FOR SINTERING

The EQUIDER platform for densification/sintering is provided for companies but also for industrial and academic R&D actors to product ceramic, metallic and composite parts with controlled densities and/or microstructures.

The following technologies are available within the EQUIDER platform :

- **HP (Hot Pressing)** : sintering by the application of an uniaxial pressure and a thermal treatment (resistive heating) under inert atmosphere
- **SPS (Spark Plasma Sintering)** : sintering by the application of an uniaxial pressure and a thermal treatment by Joule effect or hybrid heating (Joule effect/resistive heating) under vacuum or inert atmosphere
- **HIP (Hot Isostatic Pressing)** : sintering at high temperature and high isostatic pressure

	HP	SPS	HIP
Sample dimensions	Ø 20-40mm	Ø 20-150mm	H:80mm Ø 50-60mm (*)
Max Temp (°C)	1800	2200	1900
Max load/pressure	50kN	2-1250kN	1900 bars
Heating rate (°C/min)	20	400	5-10
Sample / cycle	1	1 ou +	1 ou +
Cycle duration	1 day	+/- 30min	1 day
Controlled atmosphere	Yes	Yes	Yes
Relative density	98-99%	100%	100%
Sintering T (compared to pressureless sintering)	↓	↓↓	↓
Grain growth	Limited	Very limited / No grain growth	Limited

(*) Furnace dimensions

SPS: AN EXCEPTIONAL EQUIPMENT IN WALLONIA!

The BCRC SPS equipment is composed of two different units and is used as:

- **A development tool** at laboratory and pilot scales for innovative materials (composite materials, nanostructured materials, graded-materials, transparent materials...)
- **A production tool** for the fabrication of larger pieces or samples with complex shapes

Advantages of the SPS technology:

- Very short cycles ($\sim \frac{1}{2}$ hr)
- Lower sintering temperatures and high heating rates
- Possibility to maintain fine microstructures and therefore improvement of mechanical properties

Our expertise in sintering is recognized and concerns the optimisation of the sintering conditions, the study of thermal fluxes, the sintering mechanisms, microstructural and functional characterisations of the sintered parts...

Uniaxial force: 2-100kN
Ø dies: 20-40mm
Max DC: 5500A
Max Power: 37kW

Uniaxial force: 16-1250kN
Ø dies: 80-150mm
Max DC: 24000A
Max Power: 180kW



Interested in discovering the scope of our platform and in employing our expertise in this field?

Do not hesitate to contact our team who is ready to support your processes and products developments.

Contact

CRIBC

Avenue gouverneur Cornez, 4 – B-7000 MONS (Belgique)

Tel : +32 (0) 65 40 34 34 - Fax :+32 (0) 65 40 34 60

info@bcrc.be

FEDER



UNION EUROPEENNE



Wallonie



LE FONDS EUROPEEN DE DEVELOPPEMENT REGIONAL
ET LA WALLONIE INVESTISSENT DANS VOTRE AVENIR.