

Dare to innovate
differently

CGD™
CAMBRIDGE GaN DEVICES

WELCOME

GIORGIA LONGOBARDI



GIORGIA LONGOBARDI
Founder & CEO

"Welcome to a semiconductor company that dares to be different: Cambridge GaN Devices. From sketches of ideas on a piece of paper while we discussed the latest results on GaN reliability, the spark we lit then gave us an opportunity to transform the sector.

We Commit to a Greener World and a Sustainable Future

That was the beginning of the most exciting journey we have ever initiated. A journey where challenges and hurdles are overcome by thinking differently, and with a commitment and willingness to make an impact. A journey that has been taken by the most driven and knowledgeable team we could ever dream of. At CGD we aim to deliver the highest quality and highest performance semiconductor devices and integrated circuits for a new generation of power systems.

It Works Simply. It Simply Works.

ICeGaN® technology targets outstanding efficiency with compact solutions and enhanced system performance, through easy-to-use power transistors. We put leading-edge innovation in wide-bandgap (WBG) devices at the forefront of our mission, applying deep science from our roots in Cambridge University and close engagement with customers, investors, partners and employees. It is not just about GaN.

Our identity and respect for the environment goes well beyond our products."

ABOUT CGD

MAKING SUSTAINABLE POWER ELECTRONICS POSSIBLE



WATCH VIDEO



JUST ANOTHER SEMICONDUCTOR COMPANY?

FLORIN UDREA
Founder & CTO



Yes, but with a clear Mission: Making Sustainable Power Electronics Possible

"I have been working on power semiconductor devices for over three decades. My research in Cambridge University and companies with whom I partnered has been focused on diverse materials such as silicon, gallium nitride, silicon carbide and diamond and a variety of devices from HEMTs to IGBTs and FinFETs. There have been many wrong prognostics regarding the development of gallium nitride products. But this time it is different: the time for GaN is now. The uptake in the market from now on will be on an exponential trend, at least for the next decade."

A spin-out of Cambridge University now in the scale-up phase, Cambridge GaN Devices (CGD) is a fabless semiconductor company, developing a range of energy-efficient GaN-based power devices that make greener electronics possible.

Bringing Innovation into Everyday Life

The environment is demanding answers to the world's most significant challenges. High energy consumption and CO2 emissions motivate CGD to contribute to society by preserving nature with energy-efficient and green power solutions.

Delivering Effortless Energy-Efficient GaN Solutions

At CGD, we are passionate about cutting-edge technology. We strive to solve our customers' design challenges, enabling their end products to achieve maximum performance with advanced and easy-to-drive products that deliver on the promise of energy efficiency.

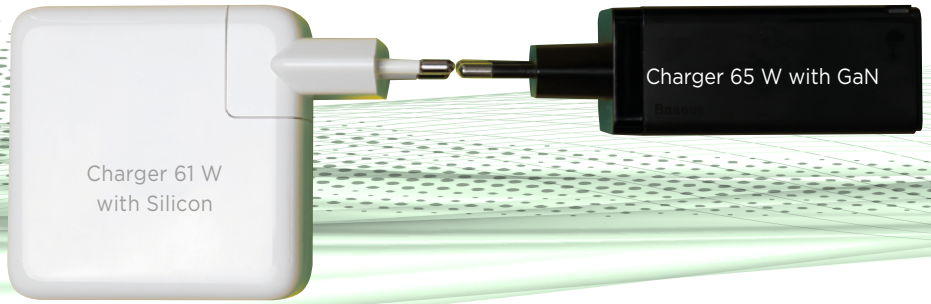
We simplify the complex, by making power designs that simply work without compromising on system performance.

_ Ease of use

_ Highest efficiency and reliability

_ Fast speed

_ High power density



GaN: GAME CHANGING INNOVATION

Gallium Nitride (GaN)-based electronic devices switch faster and consume less energy than classic silicon-based devices.

With GaN, >99% energy efficiency is achievable, enabling a new generation of compact and lighter power converters with reduced environmental impact.

MORE INFO - FOLLOW HERE:

ICeGaN®

Drive it like a MOSFET



H2 SERIES OF ICeGaN® DEVICES

Bringing innovations in gate robustness, ease of use, safe TurnOFF, and efficiency, ICeGaN® H2 series are transistors that can be driven like a MOSFET, without the needs for special gate drivers, complex and lossy driving circuits, negative voltage supply requirements or additional clamping components.

Key Features and Benefits

- **Best GaN gate robustness available in the market**
  – ICeGaN® improves reliability over multichip, external interface circuits, and other monolithically integrated driver HEMTs
- **Innovative fully integrated NL³* Circuit**
  – Record low power losses at No Load and Light Load operation
- **Advanced clamping structure with integrated Miller Clamp**
  – Eliminates need for negative gate voltages, achieves true zero volt turn off and improves dynamic $R_{DS(ON)}$ performance
- **eMode (normally off) single chip GaN HEMT**
  – Easy to use monolithically integrated interface and protection circuit offers peace of mind with unmatched gate reliability
- **Current sense function**
  – Reduces power dissipation and allows direct connection to ground for optimised cooling and EMI

PRESS RELEASE

PRODUCT BRIEF

PRODUCT BROCHURE H1/H2

* No Load and Light Load

CGD INTRODUCES ICeGaN® P2 SERIES



Key features

- **ICeGaN® gate technology** with advanced clamping structure
- **Versatile thermally enhanced** packages featuring bottom-side cooling and dual-side cooling
- **Dual-gate pinout**

Key benefits

- **Improved immunity** to dv/dt -related parasitic turn-on events, ensuring reliable operation
- **Optimised heat dissipation** for high efficiency and superior system performance in high-power applications
- **Straightforward parallelling,** simplifying design process for high-power applications and enhancing scalability

System Performance ReDEFINED

CGD REDEFINES SYSTEM PERFORMANCE IN HIGH-POWER APPLICATIONS

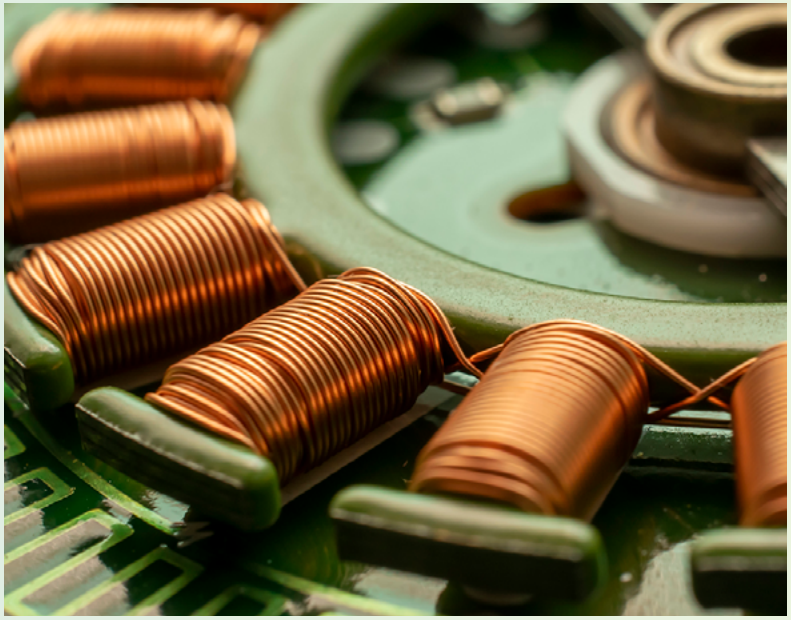


We are currently navigating through a crucial energy transition period, compelled by the urgent need to mitigate global warming and secure a sustainable future. The intricate interplay between energy production, consumption, economic growth, and environmental preservation has never been more critical, and the growing energy demand and lagging efficiency poses significant sustainability challenges.

Innovations in wide-bandgap technologies, particularly in the development of GaN (gallium nitride) power semiconductors, emerge as a pivotal force in tackling our era's pressing environmental and energy challenges.

These advancements promise enhanced energy efficiency and cost reductions in transportation, data centres, consumer, solar, energy storage and smart grid applications.

At CGD, we commit to a greener world and make a difference with our high-efficient ICeGaN® products.



ACADEMIC RESEARCH

USP VALIDATION

COMMERCIALISATION



"By working with GaN, I want to make an impact -
an impact in society, on the people, on the employees' life, on the new generation"

DR. GIORGIA LONGOBARDI

2016

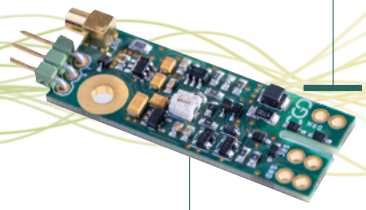
KNOWLEDGE
30+ years of academic research in semiconductors and industry consultancy and 5 spin-off companies from the same group

2016

INNOVATION
Company founded with the vision to **disrupt** the GaN Industry

2017

AWARDS
UK government backs up the development of the technology funding in multiple projects



2018

DREAM TEAM
Global **talent acquisition** of industry-experts, recognised for bringing successful products to market

Want to become part of the CGD team? Here are our open positions

2019

SEED FUNDING
Oversubscribed round of investment

Green technology project (BEIS) award

2020

CUSTOMER ENGAGEMENT
First design-in $ and USP validated by multiple leading customers

European project (GaNext) **Lead-partner endorsement**

2021

SERIES A FUNDING
Secured **9.5m$ Series A**

Technology-veteran (*Dr. Alain Charles* appointed as NED and Sales & Marketing top executive joined as advisor (*Mr. Deyoung Chan*)

AWARDS

Click for more

2022

MARKET ENTRY
Market entry and mass production with **H1 Series**

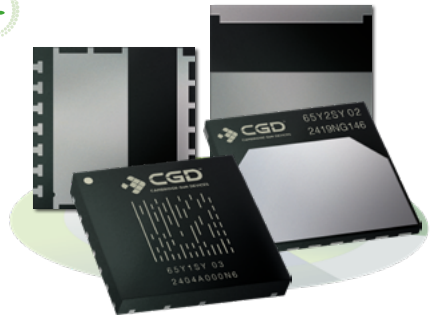
Opening of **first office overseas** (TW)

SERIES B FUNDING
Secured $19M to scale up

PARTNERSHIPS
Joining forces with TSMC and other strategic partners and global distributors to accelerate market penetration

2023

INNOVATION LEADERSHIP
Introducing H2 Series
- robust, efficient, drive them like a MOSFET



2024

PARTNERSHIPS
Partnership with Top Tier 1 for Automotive

MASS PRODUCTION
Mass production for **H2 ICeGaN®** series achieved

FOCUS ON HIGH POWER
Introducing **ICeGaN® P2 Series**





WE THINK ABOUT TOMORROW

CGD commits to a greener world and a sustainable future with efficient power electronics

In the future, sustainable and efficient power devices will be an imperative driving force for businesses in the electronics industry.

At CGD, we are acting today to put electronics on the green agenda and provide customers and end consumers with advanced power solutions, for a greener world and a more sustainable future.

CGD AT COP26

WHAT DO WE STAND FOR?



Innovation

We deliver innovative power solutions, bringing sustainable products to market that help protect the environment.

Knowledge

We foster knowledge and know-how sharing, leveraging decades of field and academic excellence, advancing the role of power electronics for a sustainable future.

Sustainability

We commit to eco-compatible business measures and apply sustainable working conduct in everything we do.

Collaboration

We promote a culture of cooperation where everyone feels empowered to work closely with partners and customers to deliver outstanding solutions.



SUPPORT MATERIAL

Watch our tutorial webinar series:

- Powering up The Future with GaN
- State-of-the-art architectures and future concepts in GaN technology for power electronics
- ICeGaN®: Enhancing robustness, reliability and quality of GaN
- The ICeGaN® Advantage in Applications

Download our latest documents and get more information here

EVALUATION BOARDS

Overview



H1/H2 BROCHURE



WHITE PAPERS

Information on products:



APPLICATION NOTE

Current Sensing with ICeGaN®



USER GUIDE

Half Bridge Evaluation Board

Dare to innovate
differently

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www.camgandevices.com