

Magnomatics® news

MAGNOMATICS SELECTED AS NEW ENERGY PIONEER

Magnomatics has been named as a New Energy Pioneer at the third annual Bloomberg New Energy Finance Summit in London.



Chris Kirby of Magnomatics said, "We are delighted that Bloomberg New Energy Finance has recognised our work with this honour. We have further developed our products over the last twelve months and achieved considerable industry engagement. We share Bloomberg New Energy Finance's belief that our products have the potential to be 'game-changing' in clean energy technology."

Michael Liebreich, chief executive of New Energy Finance, said, "Bloomberg New Energy Finance chose Magnomatics because we feel they are potential 'game-changers' in the field of clean energy technology and innovation. The work they are doing is progressive and significant to the future of the energy sector, and we think they could play a significant role in the world's transition to a lower carbon, more secure, smart, decentralised energy system."

Bloomberg New Energy Finance analysts chose the recipients after assessing hundreds of companies from across the globe, spanning all

areas of energy technology. The decision was based on three criteria: innovation, traction and potential. Each of the Bloomberg New Energy Finance Pioneers has not only demonstrated a ground-breaking new technology, but also the ability to implement it in real-life situations.

The New Energy Pioneer award is sponsored by Autodesk, a world leader in 2D and 3D design and engineering software.

Bloomberg New Energy Finance is the world's leading independent provider of news, data, research and analysis to decision-makers in renewable energy, carbon markets, energy smart technologies, carbon capture and storage, and nuclear power.

The award has further raised Magnomatics' profile and is an indicator of the rapid progress the Company is making. The Company has attracted the attention of major multi-national businesses in a variety of industry sectors and many are now long-term customers.

The next twelve months will see Magnomatics manufacturing increased numbers of prototype and pre-production products from 1.5kW to 130kW, so these are exciting times in the Company's development. Further investments in staff and software are planned and a high specification test system is soon to be commissioned at the Company's Sheffield base.

These investments will enable Magnomatics to more rapidly develop and verify its ground-breaking designs and further accelerate the growth of the business into 2011.



Making an Exhibition of it...



We recently exhibited at the Northern Defence Industries (NDI) Conference at the Royal Armouries Museum in Leeds from the 25th to the 26th March.



HM Naval Base Portsmouth.
The venue for Inec 2010

The NDI Conference was designed for customers and suppliers to examine the current and future requirements for defence programmes and improve business contacts. There were many speakers at the event, including Deputy Chief of the Defence Staff for Commitments, Lt Gen Simon Mayall, and the Managing Director of Military Air Solutions, Kevin Taylor.

We also attended the Power Electronics, Machines & Drives 2010 Conference, at the Thistle Hotel in Brighton from the 19th to the 21st April. The event focused on the latest developments in electrical drives, machines and power electronic systems and included workshops and networking opportunities which allowed us to meet many industry and business leaders.

At the event Magnomatics' Dr. David Powell gave a paper on the use of our PDD® in Marine Propulsion Systems entitled, 'Design and Analysis of Pseudo Direct-Drive Propulsion Motor' co-authored with MoD personnel.

From the 11th to 13th May, we were at the HM Naval Base in Portsmouth, at the 10th International Naval Engineering Conference

and Exhibition (INEC). Dr. Powell also presented a paper at INEC, the paper was entitled, 'Pseudo Direct Drive 15MW Marine Propulsion Motor Design,' which presented the outcomes of our recent project with the MoD.

The event provided an opportunity to talk about the current state-of-the-art technologies in Naval Engineering and aimed to address what might make up an affordable future fleet for the Royal Navy and other international naval forces. It gave us the opportunity to present our products to naval procurement officials at all levels.



Benefits of magnetic transmissions

Improved reliability

Increased efficiency

Reduced maintenance

No transmission oil

Reduction of drive train pulsations

Low noise and vibration

Inherent overload protection



Mechanical Gear with meshing teeth



Contactless Magnetic Transmission

Magnomatics' products transmit high torque without contact using powerful permanent magnets.

A gear ratio is achieved by modifying the magnetic fields between two magnet rotors with an array of steel segments, removing the requirement for a mechanical gearbox. Torque transmission is comparable to that of mechanically-gearred systems.

STOP PRESS....

We are delighted to announce that we are working on two EU Framework 7 projects with some of the most prestigious companies in the world including Fiat, Siemens AG and Volkswagen. The first, PMOB - Integrated Enabling Technologies for Efficient Electrical Personal Mobility, will result in a radical new vehicle concept for urban driving, while the second, CASTOR - Car multi-integrated pOwer tRain, will develop novel distributed powertrain architectures for electric vehicles with increased modularity, efficiency and market readiness. Both projects will employ Magnomatics' novel high torque density PDD® traction motors.



Shifting up a gear

We have recently expanded with a move to new, larger premises.

After a number of very happy and successful years at the Sheffield Biocubator, we have outgrown our premises and have moved to the Sheffield Technology Parks.

The move follows our rapid expansion over the last year and the larger, new facilities provide us with enough space to meet all our current and projected future requirements. We now have increased laboratory and workshop space, as well as office space.

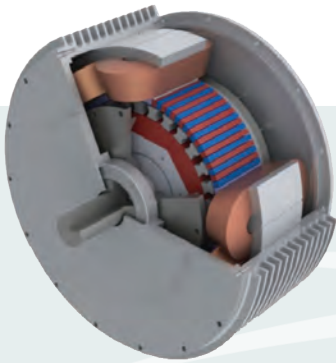
Alongside the move, there has been a rapid expansion in the Magnomatics engineering team due to the increased demand for our products and solutions - see back page for more.

The move begins an exciting new phase for the company and also allows future growth for additional employees and larger testing facilities.

Our new, full address is:
Magnomatics Limited
Sheffield Technology Parks
Cooper Buildings, Arundel Street
Sheffield S1 2NS



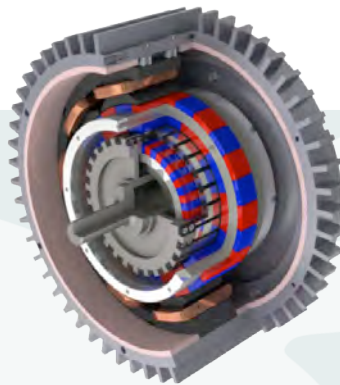
Our Products



PDD®

Ultra high torque motors and generators with integrated magnetic transmission

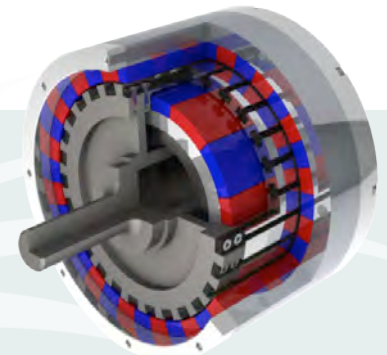
- Removes gearbox from drivetrain
- High reliability
- Very high efficiency
- Low maintenance
- Significantly smaller and lighter than direct drive equivalents
- Low cooling requirements
- Inherent torque overload protection
- Standard power electronic converter



Magnetic CVT

Continuously variable magnetic transmission

- Controllable gear ratio
- High efficiency
- Compact
- No lubrication
- Power split operation
- Matches fixed-speed prime mover to variable load

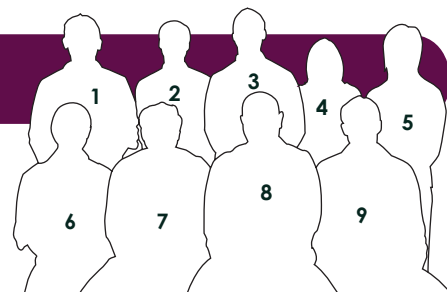


Magnetic Transmission

Passive, fixed ratio gearing

- High reliability
- Low maintenance
- No lubrication
- Transmission through a barrier
- Automatically resetting torque fuse
- Very low acoustic noise and vibration
- Compliant transmission eliminates drivetrain pulsations

Meet the team...



1. **Dr Richard Clark**, Research Director
2. **Dr Jan Rens**, Principal Design Engineer
3. **Lee Chapman**, Mechanical Design Engineer
4. **Dr Sarah Duggan**, Design and Development Engineer
5. **Dr Weiya Wang**, Senior Design Engineer
6. **Kelly Rennie**, PA to Managing Director and Office Manager
7. **Chris Kirby**, Managing Director
8. **Dr Stuart Calverley**, Technical Director
9. **Dr David Powell**, Head of Design Services

Chris Kirby – Managing Director

Chris is Managing Director and co-founder of Magnomatics. He previously co-founded NDT Solutions Ltd in 1997 and as Managing Director, he grew the Company into a world leader in portable scanning systems. He is the driving force behind the Company's growth and is responsible for establishing strategic partnerships to enable the Company to rapidly gain market share in a number of clean technology sectors.

Dr Richard Clark – Research Director

Richard previously held a lecturing post at the University of Sheffield, where he was also awarded a prestigious Royal Academy of Engineering Research Fellowship after gaining his PhD on linear electromagnetic actuators in 1999. He has 40 publications in academic journals and leading conferences and is also an ex-chairman of the UK Magnetics Society. He joined Magnomatics in 2007

Dr Stuart Calverley – Technical Director

Stuart holds a degree in Mechanical Engineering and a PhD from Loughborough and Sheffield University respectively. His PhD and subsequent prestigious EPSRC/Royal Academy of Engineering Fellowship were both centred on the design of high-speed electrical machines for gas turbines and turbo-alternators. As a post-doctoral researcher Stuart designed and built the first prototype magnetic gear system prior to the formation of Magnomatics Ltd. He joined the company in 2008

Dr David Powell - Head of Design Services

David who joined Magnomatics in 2008 was previously programme manager of the Rolls-Royce University Technology Centre in Advanced Electrical Machines and Drives at the University of Sheffield, where he worked mainly in the aerospace

and marine sectors, and was recently instrumental in the development and realisation of a prestigious new engine program. David obtained his first degree in Electrical Engineering from Sheffield and was awarded a PhD in 2003 for his research on high integrity electrical machines for aerospace.

Dr Jan Rens - Principal Design Engineer

Prior to joining Magnomatics in 2007 Jan was research associate at Sheffield University working on electromechanical valve actuators for internal combustion engines and the design of novel magnetic transmission systems. Previously he studied at the KUL, Leuven, and the UCL, Louvain-la-Neuve, Belgium before receiving his PhD degree in electrical engineering from the University of Sheffield in 2003. Together with Stuart, Jan has been leading the development of the Company's wind generator solution.

Dr Sarah Duggan - Design Engineer

Before joining Magnomatics in 2008, Sarah worked as a research associate also in the Rolls-Royce UTC. For five years Sarah worked on several projects in the area of advanced actuation specifically looking at high force high temperature devices. Prior to this she obtained a PhD in experimental stress analysis using innovative techniques to measure three dimensional stress distributions.

Lee Chapman – Mechanical Design Engineer

Following a number of years working in production and research and development in a variety of industries, Lee obtained his first class degree in Mechanical Engineering in 2006. Lee then spent 2 years as an airframe Stress Analyst for BAE Systems then a year as a senior development engineer in the rail industry. He joined Magnomatics in October 2009.

Dr Weiya Wang – Senior Design Engineer

Prior to joining Magnomatics in January 2010, Weiya worked as a Lecturer at Jiangsu University, a senior research fellow in Ultralab at Anglia Ruskin University and a research associate at the University of Sheffield. She has also worked on a wide range of projects including microprocessor embedded devices/systems, spherical actuators, and linear electromagnetic actuators for active vehicle suspension.

Kelly Rennie – PA to Managing Director and Office Manager

Kelly joined Magnomatics in January 2010 as personal assistant to the managing director and office manager. With a wealth of experience, having previously acted as a PA within a busy City of London stockbroker, she has all the skills and attributes necessary to support the growth of the team.

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Our team has recently grown to include

Matt Braithwaite - Mechanical Design Engineer

Jeff Birchall - Mechanical Design Engineer

Ben Coe - Design Engineer

Full details in the next edition!



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