REPM2023 Conference Programme

REPM2023 BIRMINGHAM
3RD-7TH SEPTEMBER 2023
UNIVERSITY OF BIRMINGHAM

Sunday 3rd September 2023	
16:00 - 19:00	**Registration and Welcome Reception** *The Bramall* Opportunity to collect your conference resources and to network.

Monday 4th September 2023	
08:00 - 08:30	**Registration and Arrival Drinks** Poster set-up for Monday poster sessions *The Great Hall*
08:30 - 09:00	**Welcome Address and Plenary Talk** *Elgar Concert Hall - The Bramall*
09:00 – 09:30	**Plenary 1** Sagawa, M - History of REPM and my Teachers in Permanent Magnets *Elgar Concert Hall - The Bramall*
09:30 - 11:00	**Session 1: Raw Materials, Resources and Mining** *Elgar Concert Hall - The Bramall* **09:30 - 09:50** - Invited talk. O1-1. Marte, J - MP Materials: Restoring the American Rare Earth Materials and Magnet Supply Chain

	09:50 - 10:10 - Invited Talk. O1-2. Castilloux, R - China's Rare Earth Resource Base **10:10 - 10:25** - Oral Talk. O1-3. De Campos, M - Recent trends in the Rare-Earth industry in Brazil and in the world **10:25 - 10:40** - Oral Talk. O1-4. Dawes, W - Rare Earths and Technology Solutions for the Green Transition **10:40 - 10:55** - Oral Talk. O1-5. Govender, I - Fluorination of the Rare Earth Carbonates and Oxides
11:00 - 11:30	**Refreshments and Poster Session** *The Great Hall*
11:30 – 13:00	**Session 2: Supply Chain Development and Magnet Processing** *Elgar Concert Hall – The Bramall* **11:30 – 11:50** - Invited Talk. O2-1. Yang, J – Development of rare earth permanent magnet material in China **11:50 – 12:10** – Invited Talk. O2-2. Yoshida, Y – Toward a sustainable supply of high-performance permanent magnets: An overview of efforts taken in Japan

	12:10 – 12:25 – Oral Talk. O2-3. Saje, B – Permanent magnets – A European permanent magnets producer view **12:25 – 12:40** – Oral Talk. O2-4. Liu, J – Sm-Co Magnets and RE Supply Chain **12:40 – 12:55** – Oral Talk. O2-5. Hatch, G – Building a resilient critical-raw-materials value chain: the importance of international standards
13:00 - 14:00	**Lunch and Poster Session** *The Great Hall*
14:00 - 15:30	**Session 3: Alloy Design and Machine Learning** *Elgar Concert Hall - The Bramall* **14:00 - 14:20** – Invited Talk. O3-1. Zhang, H - Inverse Design of permanent magnets: From high-throughput calculations to machine learning **14:20 - 14:40** – Invited Talk. O3-2. Hong, Y - A high throughput machine learning-assisted study of the effect of element substitution in RE-TM films **14:40 - 14:55** – Oral Talk. O3-3. Gopalan, R - Enhancing the coercivity of Nd-Cu diffused Nd-Fe-B material by Nb assisted grain boundary pinning **14:55 – 15:10** - Oral Talk. O3-4. Dirba, I - Towards maximum utilization of heavy rare earths in sintered NdFeB magnets

	15:10 – 15:25 – Oral Talk. O3-5. Aubert, A - Grain boundary engineering in Nd-based $ThMn_{12}$ magnets and their nitrides: A comprehensive study of challenges and limitations
15:30 - 16:00	**Refreshments and Poster Session** *The Great Hall*
16:00 - 17:30	**Session 4: Recycling of Rare Earth Magnets** *Elgar Concert Hall - The Bramall* **16:00 - 16:20** – Invited Talk. O4-1. Walton, A -The Works of Late Emeritus Professor Rex Harris **16:20 - 16:40** – Invited Talk. O4-2. Burkhardt, C - An overview of magnets recycling with focus on HPMS **16:40 - 16:55** – Oral Talk. O4-3. Bacchetta, G - Optimizing the short-loop recycling of Dy-rich end-of-life NdFeB permanent magnets **16:55 - 17:10** – Oral Talk. O4-4. Rebernik, M - Enhancing Recycled Nd-Fe-B Magnets' Performance via (Single) Grain Boundary Engineering with Nd-Cu using Spark Plasma Sintering **17:10 - 17:25** - Oral Talk. O4-5. Costa Macedo, W - Optimising Magnetic Properties of Recycled Magnets obtained via Pressless Processing (PLP)

17:30 - 19:30	**Posters and Bierstube** *The Great Hall* **Investors Forum Reception** (registered attendees only - register **here**) *Networking and Session: The Bramall Mezzanine / Elgar Concert Hall. Full agenda **here**.*

Monday Poster Session:

P1-1
Tanji, Karim - Recycling NdFeB waste based on a hydrometallurgical process for recovering Nd, Dy, and Pr rare earth elements: Design experiment screening and optimization

P1-2
Balasubramanian, B - Nd2Fe14B-based magnets from atmoized powders

P1-3
Di, J - Macroscopic demagnetisation behaviour of sintered Nd-Fe-B magnets by grain boundary diffusion of Tb

P1-4
Morcos, T - Competitive Threats to NdFeB Magnets in Green Energy Applications - Electric Vehicles and Windpower

P1-5
Griffiths, J - Hydrogen Decrepitation and Reprocessing of $SmCo_5$ Sintered Magnets

P1-6
Rathfelder, S - Production of anisotropic permanent magnets from recycled Nd-Fe-B powder with metal injection and powder extrusion moulding

P1-7
Nayebossadri, S - Hydrogen-assisted recycling of Nd-Fe-B magnets from the end-of-life audio products

P1-8
Bolis, K - Characterization of Nd-Pr-Fe-B machining wastes for recycling purposes

P1-9
Khoshsima, S - Processing of grinding slurries of Samarium Cobalt magnets for a circular economy

P1-10
Schieren, L - Development of a process to remove the neodymium-rich phase from recycled NdFeB magnet powder through leaching with organic acid

P1-11
Mishra, A - Chemical Recycling of Nd-Fe-B Permanent Magnets: A Sustainable Solution for the $Nd_2Fe_{14}B$ Matrix Phase Recovery

P1-12
Schönfeldt, M - Facing the challenges for a circular and sustainable rare earth permanent magnet recycling

P1-13
Leonowicz, M - Tailoring the magnetic properties of multipole anisotropic magnets by using a mixture of commercial and recycled anisotropic NdFeB powders

P1-14
Petavratzi E - Dynamic stocks and flows analysis of NdFeB permanent magnets in the UK electric vehicles and wind turbines

P1-15
Podmiljšak, B - Intelligent and Sustainable Processing of Innovative Rare-Earth Magnets

P1-16
Kozak, V - Optimisation of grain boundary phase separation in hydrogen processed NdFeB

P1-17
Hussain, S - Investigation of oxidation behaviour and passivation rates for recycled NdFeB powders

P1-18
Awais, M - Extraction of NdFeB Magnets From End-of-Life Electric Vehicle Scrap, Conversion into Master Alloy and Sintered Magnets

P1-19
Rosa, M - From Scrap to Magnet: On the Use of HDDR Recycled Feedstocks in the Additive Manufacturing of Composite Magnets

P1-20
Pickering, L - Investigation into the Influence of Zn Coatings on Recycling of Sintered NdFeB-type Magnets

P1-21
Bacchetta, G - Microstructure and phase transitions during the high temperature hydrogenation disproportionation of various NdFeB alloys

P1-22
Chang, H - Coercivity enhancement of sintered NdFeB magnets by doping R85Al15 (R=Ce and Pr) alloys followed with grain boundary diffusion

P1-23
Yuhao, L - Design of core-shell structure and magnetic property enhancement mechanism of dual-main-phase high-abundance Ce based sintered magnets

P1-24
Lostun, M - Tuning the hard magnetic properties of melt-spun Misch Metal-Fe-Hf-B ribbons by heat treatment

P1-25
Ahmad, T - Novel processes for the manufacturing of fine-grained Nd-Fe-B powders with steep particle size distribution

P1-26
Lai, R - Attaining excellent coercivity and thermal stability in Nd-Ce-Fe-B sintered magnets

P1-27
Zhang, Y - Coercivity Enhancement in (PrNd, Ce)-Fe-B Sintered Magnets: Effect of Grain Boundary Reconstruction by Low Melting Point Alloys

P1-28
Bae, K - Effect of Co content of Nd-Fe-B sintered magnet on grain boundary diffusion process of TbH_3 solution

P1-29
Opelt, K - Investigation of the Diffusion Behavior for Heavy Rare Earths for Nd-Fe-B Sintered Magnets Produced by the 2-Powder Method

P1-30
Lin, C - 2-Powder Method for Improving the Magnetic Properties of Ce-Containing Nd-Fe-B Magnets

P1-31
Prabhu, D - Coercivity enhancement through grain boundary diffusion in sintered Nd-Fe-B magnet using DyF3

P1-32 Costa Macedo, W - On the Changes in Microstructure and Magnetic Properties of Rare Earth-based Permanent Magnets processed via Grain Boundary Diffusion

Tuesday 5th September 2023	
08:00 – 08:15	**Registration and Arrival Drinks** Poster set-up for Tuesday's poster session The Great Hall
08:15 – 09:00	**Memorial to Past Members** Elgar Concert Hall - The Bramall
09:00 - 10:30	**Session 5: Unconventional Processing** *Elgar Concert Hall - The Bramall* **09:00 - 09:20 -** Invited Talk. - O5-1. Brooks, O - The Influence of the Disproportionated Microstructure on the Hydrogen Ductilisation Process (HyDP) for NdFeB Alloys **09:20 - 09:40 –** Invited Talk. - O5-2. Sugimoto, S - Development of High Anisotropic Nd-Fe-B HDDR Powders **09:40 - 09:55 –** Oral Talk. - O5-3. Goll, D - Rare earth based permanent magnets by laser powder bed fusion

	09:55 - 10:10 – Oral Talk. - O5-4. Shield, J - Solidification-based Additive Manufacturing of Rare Earth Permanent Magnets **10:10 - 10:25 –** Oral Talk. - O5-6. Lewis, L - Tailoring Magnetic Structures via Passive Magnetic and Strain-Field Annealing
10:30 - 11:00	**Refreshments and Poster Session** *The Great Hall*
11:00 - 12:35	**Session 6: Nanocrystalline & Thin Film Magnets** *Elgar Concert Hall - The Bramall* **11:00 - 11:20 –** Invited Talk. - O6-1. Sepehri Amin, H **-** Exploring coercivity limit in $SmFe_{12}$-based thin films **11:20 - 11:35 –** Oral Talk. – O6-2. Romero, S - Magnetostatic coupling in NdFeB melt-spun magnets **11:35 - 11:50 –** Oral Talk. – O6-3. Tang, X - (Nd,LRE)-Fe-B hot-deformed magnets for variable-magnetic-force motor applications **11:50 - 12:05** – Oral Talk. – O6-4 Kautsar, Z **-** High Coercivity and Resistivity HRE-free Nd-Fe-B hot-deformed magnet by PrCu diffusion and CaF_2-LiF eutectic mixture addition **12:05 - 12:20 –** Oral Talk. – O6-5. Staab, F - Hard magnetic $SmCo_5$-Cu nanocomposites produced by high-pressure torsion – microstructural evolution and magnetic properties [94]

	12:20 - 12:35 – Oral Talk. – O6-6. Kim, G - Dual amorphous-precursor deformation method for high-performance Nd-saving Nd-Fe-B hot-deformed magnets [143]
12:35 - 14:30	**Lunch and Poster Session** *The Great Hall* **International Advisory Committee Lunch** *Careers Networking Rooms*
14:30 - 15:55	**Session 7: RE-Fe-B Magnet Processing and Properties** *Elgar Concert Hall - The Bramall* **14:30 - 14:50 -** Invited Talk. – O7-1 Sasaki, T - Achieving 2.8 T coercivity in Nd–Fe–B sintered magnets subjected to two-step grain boundary diffusion process **14:50 - 15:10 –** Invited Talk. – O7-2 Miyawaki, H - Heavy Rare Earth free Hot-Deformed Nd-Fe-B Magnet for Traction Motor in Electric Vehicles **15:10 - 15:25 –** Oral Talk. – O7-3 Jia, Z **-** Effect of grain boundary reconstruction and regenerated main phase shell on magnetic properties in high-abundance (NdLaCeY)-Fe-B magnets **15:25 - 15:40 –** Oral Talk. – O7-4 Gassmann, J - Reducing criticality of Nd-Fe-B by recycling and partial substitution using the rapid quenching technique

	15:40 - 15:55 – Oral Talk – O7-5 Tomše, T - A strategy for rapid sintering of Nd-Fe-B-type magnets based on intense thermal radiation
16:00 - 16:30	**Refreshments and Poster Session** *The Great Hall*
16:30 - 18:00	**Session 8. Rare Earth-Free Magnets** *Elgar Concert Hall - The Bramall* **16:30 - 16:50 –** Invited Talk. – O8-1 Johnson, F - Iron Nitride: a Non-Rare-Earth Containing Permanent Magnet **16:50 - 17:05 –** Oral Talk. O8-2 Woodcock, T - Critical Materials Free MnAl-C Magnets: Recent Developments and a Perspective **17:05 - 17:20 –** Oral Talk. O8-3 Zhao, P - Nanoscale Chemical Segregation to Twin Interfaces in τ-MnAl-C and Resulting Effects on the Magnetic Properties **17:20 - 17:35 –** Oral Talk – O8-4 Capobianchi, A - Direct synthesis of highly ordered L10-FeNi nanoparticles from Layered complexes **17:35 - 17:50 –** Oral Talk – O8-5 Woodgate, C - Jumping the Gap: Can Tetrataenite become a “Hard” Permanent Magnet?

18:00 - 19:30	**Posters and Bierstube** *The Great Hall*

Tuesday Poster Session:

P2-1
Luca, S - Investigation of the microstructural features induced by the reaction of NdFeB powders with the degradation products during the debinding step in the Powder Injection Molding process

P2-2
Burkhardt, F - An investigation into the influence of zirconium additions and processing conditions on $Nd_{12.2}Fe_{81.3}B6.5$ strip-cast material during the Hydrogen Ductilisation Process (HyDP)

P2-3
Bulyk, I - New possibilities for the use of the HDDR process in the $Nd_2Fe_{14}B$-, $SmCo_5$- and Sm_2Co_{17}- based ferromagnetic materials

P2-4
Bulyk, I - Recent about HDDR process in R-Fe-B – based materials and magnets

P2-5
Kim, H - The Effect of the Solidification Microstructure on Magnetic Properties of Nd-Fe-B Magnet Manufactured by Laser Powder Bed Fusion

P2-6
Tosoni, O - Rare-earth free Nd-Fe-B magnets with high coercivity by Laser Powder Bed Fusion

P2-7

Liu, J - Additive Manufacturing of (Pr,Nd)-Fe-Cu-B Permanent Magnets

P2-8
Powell, P - The effect of varying Nd content in NdFeB alloys on the Hydrogen Ductilisation Process (HyDP)
P2-9
Gitti Tortoretto Fim, R - Laser Powder Bed Fusion of anisotropic Nd-Fe-B bonded magnets – the use of an in situ mechanical particle alignment approach

P2-10
Rosa, M - The Use of Pr-Fe-Co-B HDDR Powders to Obtain Composite Magnets via Additive Manufacturing

P2-11
Chang, H - Comparison on the improved magnetic properties of melt spun RCo5 (R = Y, La, Ce, and Pr) ribbons due to Fe and C-doping

P2-12
Aubert, A - Microstructure, coercivity and thermal stability of nanostructured (Nd,Ce)-(Fe,Co)-B hot-compacted permanent magnets

P2-13
Maccari, F - Nanocrystalline Nd-Fe-B anisotropic magnets by flash spark plasma sintering

P2-14
Cabassi, R - Steps towards the hardening of Cobalt ferrite nanoparticles

P2-15
Mori, Y - Suppression of the formation of soft magnetic phase for $Sm(Fe\text{-}Co)_{12}$-B thin films by introduction of seed layer

P2-16

Yoo, J - Fabrication of high-remanence Nd-Fe-B hot-pressed magnets by manipulating coercivity of initial anisotropic HDDR powders

P2-17
Jang, Y - Enhancement of crystal alignment and remanence of large-scaled Ce-substituted Nd-Fe-B magnet by hot deformation

P2-18
Payattuvalappil, A - A Novel Approach for the Detection of the L10 Phase in FeNi

P2-19
Winkler, J - Establishing the ultrasonic-atomization of MnAl-based alloys for the hot-extrusion of rare-earth-free permanent magnets

P2-20
Arneitz, S - Investigation on the influence of printing parameters on the magnetic properties of an AM rare earth free alloy

P2-21
De Campos, M - Role of exchange energy on the relationship between coercivity and grain size: Application for hard ferrites

P2-22
Ohkubo, T - Effect of processing methods and Cu-doping on the coercivity of $SmFe_{12}$-based sintered magnets

P2-23
Maccari, F - Effect of aging on the magnetic and physical properties of consolidated Mn-Al-C

P2-24
Zhang, J - Microstructure and magnetic properties evolution in anisotropic Sm(Fe,Ti,V)12-based sintered magnets by composition modification

P2-25
Niarchos, D - Bulk L10-FeNi: A novel approach towards the tetragonal phase

P2-26
da Silva V - The possible formation of tetrataenite by mechanical activation and the addition of light elements.

P2-27
Dirba, I - Synthesis and magnetic properties of bulk α″-$Fe_{16}N2$/$SrAl2Fe10O_{19}$ composite magnets

P2-28
Davis-Fowell, E - Investigating Plane Strain Compression as a route to improve extrinsic magnetic properties of MnAlGa

Wednesday 6th September 2023	
08:30 - 09:00	**Registration and Arrival Drinks** Poster set-up for Wednesday poster sessions *The Great Hall*
09:00 - 09:30	**Plenary Talk** *Elgar Concert Hall - The Bramall* Plenary 2 Coey, M - Why is it difficult to make a new permanent magnet?

09:00 - 11:00	**Session 9: RE-Co Magnets and Processing** *Elgar Concert Hall - The Bramall* **09:30 - 09:50 –** Invited Talk. – O9-1 Hadjipanayis, G - Towards the adaptation of $Sm(Fe,Co,M)_{12}$ compounds for new rare-earth-lean permanent magnets **09:50 - 10:05 –** Oral Talk. – O9-2 Castro, J - Anisotropy field determination in $SmCo_5$ sintered magnets **10:05 - 10:20 –** Oral Talk. – O9-3 Park, K - Nanocrystalline Sm-Co-Cu bulk magnets prepared by low-oxygen nanopowder metallurgy process **10:20 - 10:35 –** Oral Talk. – O9-4 Sheridan, R - Strip Casting of Sm_2TM_{17}-type Alloys for Production of the Metastable $SmTM_7$ Phase **10:35 - 10:50 –** Oral Talk. – O9-5 Niarchos, D - Rare Earth and Transition Metal based High Entropy Alloys (HEAs) as building blocks for novel permanent magnets
11:00 - 11:30	**Refreshments and Poster Session** *The Great Hall*

11:30 - 12:50	**Session 10: Density Functional Theory (DFT) and Micromagnetic Modelling** *Elgar Concert Hall - The Bramall* **11:30 - 11:50** – Invited Talk – O10-1 Patrick, C - First-principles calculations on rare earth magnets - bridging the gap between theory and reality **11:50 - 12:05** – Oral Talk. – O10-2 Staunton, J - Crucial role of Fe in determining the hard magnetic properties of $Nd_2Fe_{14}B$: finite temperature, first-principles theory calculations **12:05 - 12:20** – Oral Talk – O10-3 Kulesh, N - Exploring coercivity limits in ultrafine-grained Nd-Fe-B magnets with deep learning image segmentation and micromagnetic simulation **12:20 - 12:35** – Oral Talk – O10-4 Ohmer, D - Micromagnetic simulation of nanostructured $Sm_2(Co,Fe,Cu,Zr)_{17}$ magnets **12:35 - 12:50** – Oral Talk – O10-5 Paudyal, D - Discovery of rare-earth lean high-performance permanent magnets
12:50 - 14:00	**Lunch and Poster Session** *The Great Hall*

14:00 - 15:35	**Session 11: Applications of Permanent Magnets** *Elgar Concert Hall - The Bramall* **14:00 - 14:20** – Invited Talk. – O11-1 Campbell A - The Application of Permanent Magnets in Electrical Machines for Aerospace Full Electric and Hybrid Electric Aircrafts **14:20 - 14:35** – Oral Talk. – O11-2 Perigo, E - Considerations in Magnets Selection for Industrial Motors: The Case of Permanent Magnet-Assisted Synchronous Reluctance Motors **14:35 - 14:50** – Oral Talk. – O11-3 Krengel, M - Special features of the NdFeB Hot pressing process- a pump manufacturer as magnet producer [23] **14:50 - 15:05** – Oral Talk. - O11-4 Vishwakarma, A – Geometry-based reduction of rare-earth-containing raw materials for permanent magnets **15:05 - 15:20** – Oral Talk – O11-5 Völker, D - Challenges in applications of permanent magnets in accelerators on the example of the major accelerator upgrade at DESY **15:20 - 15:35** – Oral Talk – O11-6 Dempsey, N - Development and use of NdFeB micro-magnets
15:35 - 16:00	**Refreshments and Poster Session** *The Great Hall*

15:35 - 17:30	**Tour of Magnet Recycling Facilities** *Sign up at registration desk*
19:00 - 23:00	**REPM2023 Conference Dinner - The Council House** *Victoria Square Birmingham B1 1BB* Coaches available from Edgbaston Park Hotel at 18:00 Return coaches from the Council House to Edgbaston Park Hotel at 23:00

Wednesday Poster Session:

P3-1
Ti, E - The effect of Fe, Ni substitution on Phase balance in $SmCo_5$ Alloys

P3-2
Brooks, O - Changes in Resistivity with Temperature for SmCo type Sintered Magnets

P3-3
Furusawa, D - Influence of Oxygen Amount to Constituent Phases in Hot Isostatic Press (HIP)-processed Sm-Y-Fe-based Alloy with ThMn12 Compound

P3-4
Hadjipanayis G - Sm–Fe(Co)–Ti phase equilibria and liquid-phase sintering of $Sm(Fe,Co,Ti)_{12}$ magnets

P3-5
Hadjipanayis G - High coercivity in monocrystalline (Sm,Zr)(Fe,Co,Ti)$_{12}$ particles prepared via high-temperature calcium reduction of oxides

P3-6
Tozman, P - Magnetic properties and phase diagram of Sm-Co-B: An exploratory study

P3-7
Castro, J - Atomistic calculation of the domain wall energy in rare-earths with hexagonal structure

P3-8
Faria, R - Electrical analogous for permanent magnets

P3-9
Bolyachkin, A - Tomography-based Micromagnetic Simulations of Nd-Fe-B Magnets: the Role of Intergranular Phase Nonuniformities

P3-10
Werwiński, M - Effect of transition metal doping on magnetic hardness of $CeFe_{12}$-based compounds: DFT study

P3-11
Ferrer, N - Investigating the role of interactions on the stability of magnetic anisotropy in L10 magnetic materials

P3-12
Fischbacher, J - Micromagnetic study of the impact of grain boundaries on coercivity

P3-13
Zou, M - Localized Demagnetization Between Unequally Sized Like Magnetic Poles and FEA Determined Occurrence Conditions for Applications

P3-14
Ahmed, Y - Polymerisation of Barium Hexaferrite Ferrofluids Producing a Magnetic Nanoparticle Composite Matrix

P3-15
Baek, Y - Facile Synthesis of Epsilon Ferrites via Spray Drying for Millimeter-wave Absorption

P3-16
Ye, X - Voltage-driven giant modulation of magnetism in permanent magnets

P3-17
Hedlund, D - Hard Magnetic Phases of $CeFe_{11}W_1$-xTix

P3-18
Niarchos, D - 1D-2D Assemblies of sub-millimeter NdFeB -based magnets

P3-19
Hohs, D - A method for quality assessment of FeNdB sintered magnets

P3-20
Romero, S - Recoil curves as a tool to identify coercivity mechanisms

P3-21
Martinek, G - Vectorial Rare Earth Magnet Hysteresis Loops Measured in a Biaxial Vibrating Sample Magnetometer

P3-22
Hrushko, O - Thermal stresses in the $Nd_2Fe_{14}B$ polycrystal system with grain boundary phase

P3-23
Suwa, T - Feature extraction of 3D real pictures of microstructure and magnetic domain in a Tb diffused Nd-Fe-B sintered magnet

P3-24
Günzing, D - Insights into hot-deformed anisotropic $Nd_2Fe_{14}B$ magnets: Interaction domains studied by non-destructive 3D magnetic laminography and magnetometry

P3-25
Hosokawa, A - Low oxygen $Sm_2Fe_{17}N_3$ sintered magnets produced from ball-milled powder

P3-26
Kim, J - Synthesis Mechanism of Sm-Fe compounds in Low-Temperature Reduction-Diffusion Process

P3-27
Grigoras, M - Preparation by gas atomization of elongated powders α″-$Fe_{16}N_2$ for anisotropic magnets

P3-28
Vijayaragavan, G - Coercivity enhancement on Sm-Fe-N using novel low melting Zn based eutectic alloy

08:30 – 09:00	**Registration and Arrival Drinks** *The Great Hall*
09:00 - 10:40	**Session 12: Applications & Sustainability of Magnets** *Elgar Concert Hall - The Bramall* **09:00 - 09:20** – Invited Talk. – O12-1 Gutfleisch, O - Sustainability of tomorrow´s magnets and their applications **09:20 - 09:40** – Oral Talk. – O12-2 Blomgren, J - Automated High-Speed Approaches for the Extraction of Permanent Magnets from Hard Disk Drives Components for Circular Economy **09:40 - 09:55** – Oral Talk.- O12-3 Delette, G - Design of complex shaped REPM for increasing the performance and recyclability of synchro-reluctant machines **09:55 - 10:10** – Oral Talk. – O12-4 Grau, L - Processability and separability of commercial anti-corrosion coatings in HPMS recycling of NdFe **10:10 - 10:25** – Oral Talk. – O12-5 Wendhausen, P - Improvement of magnetic properties of recycled Nd-Fe-B magnets by employing the GBD process **10:25 - 10:40** – Oral Talk. – O12-6 Morcos, T - Competitive Threats to NdFeB Magnets in Green Energy Applications - Electric Vehicles and Windpower

10:40 - 11:10	**Refreshments** *The Great Hall*
11.10 - 12.30	**Session 13: Advanced Characterisation** *Elgar Concert Hall - The Bramall* **11:10 - 11:25** – Oral Talk. – O13-1 Cheema, N - New measurement system for evaluation of eddy current loss in permanent magnets **11:25 - 11:40** – Oral Talk. – O13-2 Mouron, R - Anisotropic lattice diffusion of heavy rare earth elements (Tb, Dy) in the magnetic phase of Nd-Fe-B permanent magnets: an experimental model **11:40 - 11:55** – Oral Talk. – O13-3 Ni, C - Microscopic Consequences of Strain and Magnetic Field on Atomic Ordering in MnAl **11:55 - 12:10** – Oral Talk. – O13-4 Xia, W - In-situ Magnetizing Holder with Strong In-plane Field for Lorentz Microscopy **12:10 - 12:25** – Oral Talk. – O13-5 Ishigami, K - Understanding the Coercivity of Ga-containing Nd–Fe–B Sintered Magnets from Feature Extraction and Selection of X-ray Diffraction Patterns via Dimension Reduction and Sparse Modeling
12:30 - 13:30	**Lunch** *The Great Hall*

13:30 - 15:00	**Session 14: Rare Earth Nitride Magnets** *Elgar Concert Hall - The Bramall* **13:30 - 13:50** – Invited Talk. - O14-1 Iriyama, T - Recyclable Sm-Fe-N Bonded-Magnet Using Environmentally-Friendly CNF Binder **13:50 - 14:05** – Oral Talk. – O14-2 Hirayama, Y - Magnetically anisotropic nanopowder of $TbCu_7$-type Sm-Fe-N **14:05 - 14:20** – Oral Talk. – O14-3 Sorana, L - Sintering of $Nd(Fe,Mo)_{12}$ tetragonal compounds for permanent magnets applications **14:20 - 14:35** – Oral Talk. – O14-4 Yamaguchi, W - Improvement of coercivity of $Sm_2Fe_{17}N_3$ powder by coating with material designed to restore local magnetic anisotropy on the surface **14:35 - 14:50** – Oral Talk. – O14-5 Matsuura, M - Microstructural Changes at The Sm_2Fe_{17} and Zn Interface
15:00 - 15:30	**Refreshments** *The Great Hall*
15:30 - 17:00	**Plenary Talk and Closing Remarks** *Elgar Concert Hall - The Bramall* Hono, K - Permanent Magnet Research at NIMS - ESICMM Succeeded by Permanent Magnet Materials Open Platform and DXMag

Conference end.