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MEOOPS-MAG: Motor, Amplifier, Generator A Complete IEEE Technology Report on Permanent-Magnet Oscillation-Driven Propulsion, Voltage Amplification, and Electrical Generation

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Abstract

MEOOPS-MAG (Motor, Amplifier, Generator) is a cylindrical, battery-form-factor energy device that integrates the MEOOPS (Magnetic Energy Octagon Oscillator for Power Source) permanent-magnet oscillation core with an enclosed electromagnetic coil assembly to deliver three configurable operating modes: Motor, Voltage Amplifier, and Generator. Building on the MEAMOMU (Magnetic Energy Automaton Mechanical Oscillator for Multiple Uses) lineage, MEOOPS-MAG requires no external fuel, solar irradiance, or wind input. Oscillation is sustained by the Laithwaite Flux Decoupling Effect gated through pyrolytic carbon flux valves. The resulting mechanical motion drives an enclosed electromagnetic coil that acts as a motor armature, transformer primary, or generator rotor depending on load configuration. Four simultaneous energy transduction modes -- electromagnetic induction (EI), piezoelectric (PZ), triboelectric (TE), and GERTAM valence electron harvesting (VEH) -- provide multi-channel electrical output. This report presents the complete theoretical framework, internal architecture, three-mode operational analysis, GERTAM sub-system, scalability matrix, comparative analysis, and applications roadmap for the MEOOPS-MAG platform.

Index Terms *-- MEOOPS-MAG, MEOOPS, MEAMOMU, permanent magnets, pyrolytic carbon, magnetic flux valve, mechanical oscillator, electromagnetic motor, voltage amplifier, generator, GERTAM, valence electron harvesting, triboelectric, piezoelectric, renewable energy, Laithwaite effect, battery replacement, electric propulsion.*

1. INTRODUCTION

Conventional motor-generator systems rely on electromagnetic rotating machinery driven by external electrical power (motors) or mechanical prime movers consuming chemical fuel or kinetic renewable inputs (generators). Both paradigms impose significant infrastructure, maintenance, and environmental costs. The transition to distributed, fuel-free power generation requires fundamentally new prime mover technologies that can operate continuously without external energy inputs across a wide range of physical scales.

MEOOPS-MAG addresses this requirement by integrating the MEOOPS octagonal permanent-magnet oscillator core with an enclosed electromagnetic coil within a standard cylindrical battery-form-factor casing. The oscillating magnetic field of the MEOOPS core propels the enclosed coil through alternating attraction and repulsion cycles, creating mechanical motion that can be harnessed in three distinct electrical output modes without any modification to the core hardware -- only the load configuration changes.

The cylindrical battery form factor is a deliberate engineering choice: it enables MEOOPS-MAG to serve as a drop-in replacement for conventional electrochemical cells (AA, C, D, 18650, or custom prismatic formats) in portable electronics, tools, vehicles, and industrial equipment, providing continuous power without chemical depletion, hazardous material disposal, or recharging infrastructure.

This report is organized as follows: Section II provides background and prior art. Section III presents the MEOOPS-MAG operating principles. Section IV details the internal architecture. Sections V-VII analyze each of the three operating modes. Section VIII covers the GERTAM sub-system. Section IX analyzes scalability. Section X compares MEOOPS-MAG to prior art. Section XI outlines applications. Section XII discusses limitations and future work. Section XIII concludes.

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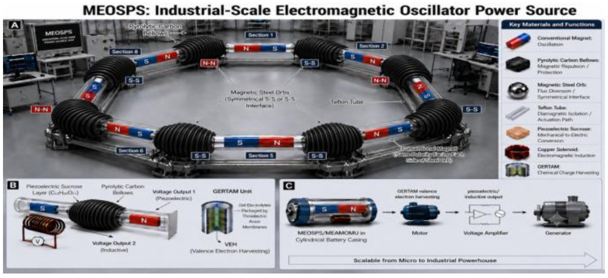

Fig. 1: MEOOPS-MAG Cylindrical Assembly -- Internal Layout (MEOOPS Core)

Fig. 2: MEOOPS-MAG in motion

2. BACKGROUND AND PRIOR ART

A. *MEAMOMU and MEOOPS Lineage*

MEOOPS-MAG is the third-generation device in the Magnetic Voltage Source technology lineage. MEAMOMU (Magnetic Energy Automaton Mechanical Oscillator for Multiple Uses) [1] established the core permanent-magnet bilateral oscillator concept using pyrolytic carbon flux valves and the Laithwaite Flux Decoupling Effect. MEOOPS (Magnetic Energy Octagon Oscillator for Power Source) [2] scaled MEAMOMU to an eight-section octagonal architecture with programmable valve topology and eight simultaneous output channels. MEOOPS-MAG integrates either a MEOOPS or MEAMOMU core into a cylindrical casing with an enclosed electromagnetic coil [3].

B. *The Laithwaite Flux Decoupling Effect*

Prof. Eric Laithwaite of Imperial College London demonstrated that two same-strength, same-polarity permanent magnets aligned co-linearly and coupled through a ferromagnetic steel yoke exhibit a critical instability: diverting even one of the two far-end coupled flux pathways causes all four coupled flux lines to simultaneously decouple [6]. The net force between the magnet assembly and the coupler transitions from attractive to repulsive, providing the driving impulse for oscillatory motion. This effect, exploited through programmable pyrolytic carbon flux valves, is the thermodynamic engine of MEOOPS-MAG.

C. *Diamagnetic Flux Valves*

Pyrolytic carbon (highly oriented pyrolytic graphite, HOPG) exhibits a magnetic susceptibility of chi ~ -4.0 x 10^-4 to -6.5 x 10^-4 SI (anisotropic), among the highest room-temperature diamagnetic values of any naturally occurring or synthesized material [10]. This property enables pyrolytic carbon to function as a passive, electronically controllable flux barrier -- redirecting and blocking magnetic field lines without requiring electrical power -- when mechanically positioned over a flux path.

D. *Prior Electromagnetic Motor-Generators*

Conventional brushed and brushless DC motors, synchronous and asynchronous AC generators, and linear electromagnetic actuators all require an external electrical or mechanical energy input to initiate and sustain operation. No prior art discloses a motor, amplifier, or generator configuration driven by a self-sustaining permanent-magnet oscillation core without external energy input. MEOOPS-MAG is the first such device of record.

3. MEOOPS-MAG OPERATING PRINCIPLE

A. *Core Oscillation Mechanism*

The MEOOPS core within MEOOPS-MAG contains eight bilateral oscillation sections arranged in a regular octagonal prism. In each section, a NdFeB N52 permanent magnet carrier (Br ~ 1.4-1.5 T) reciprocates within a PTFE guide tube between two magnetic steel coupler orbs. Each orb is encapsulated in a hemispherical pyrolytic carbon bellow valve shell with two aperture holes aligned to the magnet poles. Non-retentive ferromagnetic conduit material (Fe-Al 50/50 or Alnico) lines the aperture holes to concentrate flux attraction in the open-valve state.

When the magnet carrier approaches orb A, the near-side pyrolytic carbon bellow valve closes (k_PC -> 1), diverting far-end flux away from orb A. This triggers the Laithwaite Flux Decoupling Effect: all four coupled fluxes decouple and the carrier experiences net repulsion from orb A. Simultaneously, the diamagnetic acrylic tether rod opens the far-side bellow valve of orb B, restoring attraction. The carrier accelerates toward orb B and the cycle repeats, producing self-sustaining oscillation at frequency f0.

B. *Governing Equations*

The attractive force on the magnet carrier at effective aperture area A_eff:

$$F_{att} = B^2 * A_{eff} / (2 * \mu_0)$$

where the effective area is modulated by the diamagnetic occlusion coefficient k_PC:

$$A_{eff} = A * (1 - k_{PC}), \quad k_{PC} \text{ in } [0, 1]$$

The diamagnetic repulsion force on the pyrolytic carbon valve:

$$F_{repul} = (\chi_{PC} * V_{PC} / \mu_0) * B * (dB/dx)$$

Equation of motion for the magnet carrier of mass m with damping c:

$$m * x'' + c * x' + F_{net}(x, k_{PC}(x)) = 0$$

where F_net = F_att(A_eff) - F_repul. Because F_net reverses sign at each valve switching event, the system exhibits a self-sustaining limit cycle with no external energy input required.

Fig. 2: MEOOPS-MAG Three-Mode Operating Configuration (Motor, Amplifier, Generator) from a Single Core Unit

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4. INTERNAL ARCHITECTURE

A. Cylindrical Casing and Form Factor

The MEOOPS-MAG casing is a cylindrical enclosure engineered to standard battery form factor dimensions. The cylinder is fabricated from non-magnetic structural composite material with two conductive terminal endcaps (negative: flat; positive: raised nub) compatible with standard battery holders and connectors. Internal diameter and length are configurable to match 18650, D-cell, or custom prismatic formats.

B. MEOOPS Oscillation Core

The MEOOPS oscillation core occupies the inner portion of the cylinder. Eight oscillation sections are arranged in an octagonal pattern around the central shaft. Each section contains one NdFeB N52 magnet carrier, two steel coupler orbs with pyrolytic carbon bellow valves, diamagnetic acrylic tether rods, and PTFE guide tubes. The octagonal geometry provides balanced magnetic force vectors (net zero radial load on the central shaft) and structural rigidity through shared octagonal rib members.

C. Enclosed Electromagnetic Coil Assembly

The enclosed electromagnetic coil assembly occupies the outer annular region of the cylinder. This assembly consists of copper solenoid windings (AWG determined by scale and power rating) wound on a non-magnetic bobbin and positioned coaxially around the MEOOPS core. As the MEOOPS core magnets oscillate, the time-varying magnetic flux through the solenoid assembly induces an EMF per Faraday's Law. The coil is rigidly fixed to the casing in Generator mode, free to translate in Motor mode, and transformer-coupled in Amplifier mode.

TABLE I: MEOOPS-MAG Core Component Specifications

Component	Material / Type	Function	Key Parameter
NdFeB Magnet Carrier	Grade N52, NdFeB	Oscillating prime mover	Br ~ 1.4-1.5 T
Steel Coupler Orbs	AISI 1018 Magnetic Steel	Flux coupling / switching point	mu_r ~ 100-1000
PC Bellow Valves	Pyrolytic Carbon (HOPG)	Diamagnetic flux valve	chi ~ -4.0e-4 SI
Aperture Conduit	Fe-Al 50/50 or Alnico	Flux channeling (open state)	Low coercivity
Guide Tubes	PTFE (Teflon)	Frictionless linear guide	chi ~ -0.88e-6 SI
Valve Tether Rods	Diamagnetic Acrylic	Reciprocal valve linkage	Non-repulsive
EM Coil Assembly	Copper windings	Motor / Amplifier / Generator	sigma=5.96e7 S/m
Sucrose Piezo Caps	crose C12H22O11 crystal	oelectric compression output	Orthorhombic PZ
Cylinder Casing	Non-magnetic composite	Structural housing / terminals	Battery form factor

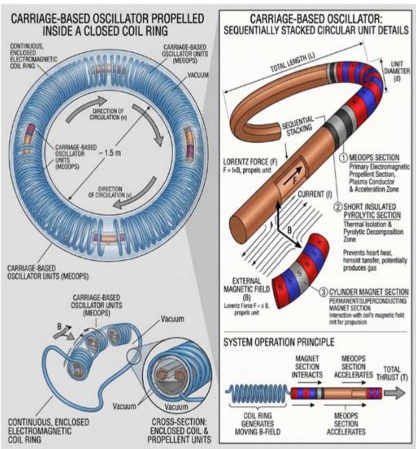

Fig. 3: MEOOPS-MAG Tri-Mode -- Internal Cross-Section

5. MOTOR MODE OPERATION

A. Mechanical Output Coupling

In Motor mode, the enclosed electromagnetic coil assembly is mechanically coupled to an external load via a central output shaft or linear push rod. The oscillating magnetic field of the MEOOPS core exerts alternating attractive and repulsive forces on the coil assembly, driving it in reciprocating linear motion. A cam-follower or rack-and-pinion conversion stage transforms linear reciprocating motion into continuous rotary torque for conventional rotary motor applications. Alternatively, the linear motion output is used directly for linear actuation, pump drives, or compressor applications.

B. Torque and Power Equations

The instantaneous force on the EM coil in the oscillating field:

$$F_{coil} = I * L * B_{eff}$$

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where I is the coil current (A), L is the total active conductor length (m), and B_{eff} is the effective local flux density at the coil location. For a reciprocating stroke length s at oscillation frequency f0, the average mechanical power output is:

$$P_{mech} = F_{coil} * s * 2 * f0$$

Rotary torque from a crank mechanism of radius r: $T = F_{coil} * r$. Motor efficiency $eta_M = P_{mech} / P_{mag}$, where P_{mag} is the magnetic power drawn from the oscillating field. At optimal load impedance matching, eta_M approaches the electromechanical coupling factor k^2 of the coil-field system.

C. Applications

Motor mode applications include electric vehicle drive trains, marine propulsion, industrial conveyor and pump drives, robotic actuators, HVAC compressors, and aerospace attitude control mechanisms. Because the prime mover requires no external electrical supply, Motor mode provides propulsion without a battery pack -- the magnetic field of the NdFeB core IS the energy source.

6. VOLTAGE AMPLIFIER MODE OPERATION

A. Transformer Coupling Principle

In Amplifier mode, the enclosed EM coil functions as the primary winding of a magnetically coupled transformer. External secondary windings are wound around the outer surface of the cylindrical casing or on a concentric bobbin. The oscillating magnetic flux of the MEOOPS core provides the alternating field that drives transformer action. The turns ratio N_s / N_p determines the voltage step-up or step-down ratio:

$$V_{secondary} = V_{primary} * (N_s / N_p)$$

where $V_{primary}$ is the EMF induced in the primary (enclosed) coil by the oscillating MEOOPS field, and N_s, N_p are the secondary and primary winding turn counts respectively.

B. No Semiconductor Active Devices Required

A key advantage of MEOOPS-MAG Amplifier mode is that voltage transformation is achieved purely through magnetic coupling, without semiconductor transistors, MOSFETs, IGBTs, or integrated circuit components. This eliminates semiconductor switching losses, electromagnetic interference from switching transients, and component failure modes associated with solid-state power electronics. The resulting amplifier is inherently robust in high-radiation, high-temperature, and high-vibration environments.

C. Frequency and Impedance Considerations

The MEOOPS oscillation frequency f0 determines the transformer operating frequency. Because MEOOPS programmable valve topology allows real-time frequency tuning (Section VIII), the Amplifier mode operating frequency can be adjusted in-situ to optimize transformer efficiency and match load impedance. At industrial scale (f0 ~ 1-10 Hz), ferromagnetic core materials with high permeability and low eddy-current loss (e.g., silicon steel laminations or ferrite) should be specified for the transformer core geometry.

7. GENERATOR MODE OPERATION

A. Electromagnetic Induction Output

In Generator mode, the enclosed EM coil is fixed rigidly to the casing. The oscillating MEOOPS magnet carriers pass through the interior of the coil, generating a time-varying flux linkage. The induced EMF per Faraday's Law is:

$$EMF = -N * d(Phi_B)/dt$$

where N is the total number of turns in the generator coil and $Phi_B = B_{eff} * A_{coil}$ is the instantaneous flux linkage. The open-circuit voltage V_{oc} and short-circuit current I_{sc} are related to the coil internal resistance R_{int}:

$$V_{oc} = EMF_{peak} / sqrt(2) \text{ [RMS] } I_{sc} = EMF_{peak} / R_{int}$$
$$P_{max} = EMF_{peak}^2 / (4 * R_{int}) \text{ [max power transfer]}$$

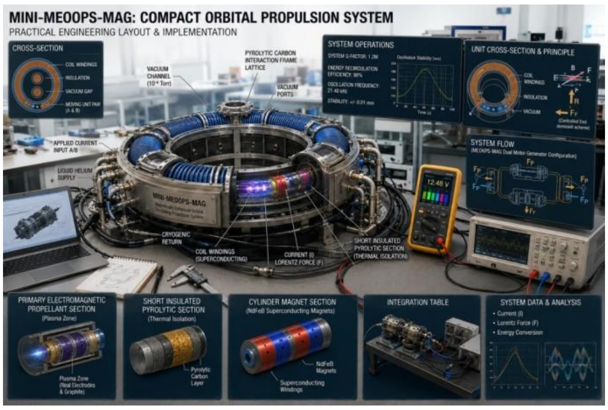

Fig.4: MEOOPS-MAG Generator Mode -- Electromagnetic Induction Schematic (Oscillating Magnets, Solenoid Coil, Load Circuit)

B. Supplementary Transduction Modes

Generator mode also activates the three supplementary transduction modes simultaneously: piezoelectric compression of sucrose crystal caps on the coupler orbs (PZ), triboelectric generation from PTFE guide tube contact (TE), and GERTAM valence electron harvesting (VEH) from the triboelectrically recharged gel electrocyte cells. All four electrical outputs are combined on a common AC/DC conversion bus, increasing total output power density compared to EI alone.

C. Grid and Storage Integration

For grid-scale Generator mode operation, the AC output of MEOOPS-MAG is rectified to DC and fed through a DC-AC inverter synchronized to grid frequency. At utility scale (magnet dimensions > 1 m, f0 ~ 0.01-1 Hz), multiple MEOOPS-MAG units are arrayed in phase-staggered configurations to produce smooth, continuous AC output suitable for direct grid injection without energy storage buffering.

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TABLE II: MEOOPS-MAG Four-Mode Energy Transduction Summary

Mode	Output Type	Voltage Range	Impedance	Primary Use
EI (Solenoid)	AC (rectifiable)	1 V -- 1 kV	Low-Medium	Grid / battery charging
PZ (Sucrose Cap)	High-V pulse	10 V -- 10 kV	High	Capacitive storage
TE (PTFE Guide)	AC (rectifiable)	10 V -- 1 kV	High	GERTAM recharge / IoT
GERTAM VEH	DC continuous	0.5 V -- 50 V	Medium	Baseline DC load

8. GERTAM -- GEL ELECTROCYTES RECHARGED BY TRIBOELECTRIC ANION MEMBRANES

A. Bio-Inspired Architecture

GERTAM is a self-recharging electrochemical DC power sub-system integrated into the MEOOPS-MAG platform. The concept is inspired by the biological electrocytes of the electric eel (Electrophorus electricus), which are ultra-thin polarized cells capable of generating over 600 V in brief bursts through coordinated ion channel gating across anion-selective membranes [12]. GERTAM replicates this architecture using synthetic gel polymer electrolytes and industrial anion exchange membranes.

B. Cell Construction

Each GERTAM cell consists of: (1) a poly(vinyl alcohol)/KCl hydrogel matrix loaded with PTFE nano-powder (triboelectric-active particulates); (2) quaternary-ammonium-functionalized hydrocarbon anion exchange membranes (AEM) providing selective anion (OH-, Cl-) transport while blocking cation crossover; and (3) copper external electrodes. Multiple cells are stacked in series for voltage scaling and in parallel for current scaling.

C. Triboelectric Recharge Mechanism

As the MEOOPS core magnet carrier reciprocates within the PTFE guide tubes, contact electrification between PTFE and the carrier casing generates triboelectric surface charge. This charge is harvested via conductive interface electrodes and directed onto the GERTAM AEM surface. The triboelectric charge redistribution across the AEM drives anion migration through the gel matrix, electrochemically recharging the cell potential. The cell output obeys the Nernst equation for the prevailing electrochemical couple:

$$E_{cell} = E0_{cell} - (R*T / n*F) * \ln(Q)$$

where E0_cell is the standard cell potential, R = 8.314 J/(mol*K), T is absolute temperature, n is electrons transferred, F = 96,485 C/mol, and Q is the reaction quotient maintained by the triboelectric anion flux.

9. PROGRAMMABLE FREQUENCY CONTROL

MEOOPS-MAG inherits the programmable magnetic topology of the MEOOPS core. The pyrolytic carbon bellow valve aperture geometry is adjusted via servo-actuated diamagnetic acrylic aperture rings driven by miniature stepper motors embedded in the casing wall. Varying the aperture diameter changes the valve switching threshold (k_PC transition point), altering the effective magnetic spring constant of the oscillation cycle and thus the natural frequency f0. This enables real-time frequency tuning across the design range without modifying the permanent magnet configuration:

$$f0 = (1/2*\pi) * \sqrt{k_{eff} / m_{carrier}}$$

where k_eff is the effective magnetic spring constant (proportional to B^2 * dA_eff/dx) and m_carrier is the magnet carrier mass. Frequency control enables MEOOPS-MAG to: (1) match transformer resonance in Amplifier mode; (2) optimize back-EMF cancellation in Motor mode; and (3) synchronize generator output frequency to grid requirements.

10. SCALABILITY ANALYSIS

The governing magnetic force expressions scale with flux density B (material property, scale-invariant for NdFeB) and physical cross-section A (scales with device size). MEOOPS-MAG can therefore be fabricated across a wide size continuum:

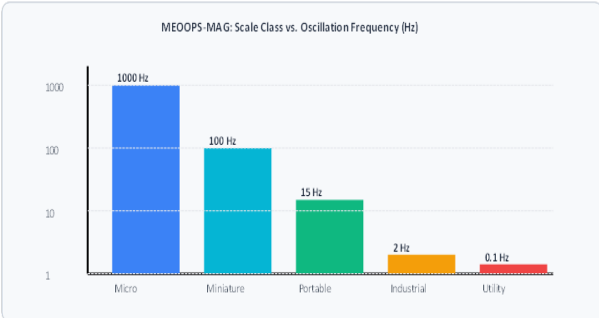

Fig. 4: MEOOPS-MAG Scalability -- Oscillation Frequency by Scale Class (Log Scale, Representative Midpoint Values)

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TABLE III: MEOOPS-MAG Scalability Matrix

Scale Class	Magnet Size	Freq. Range	Dominant Mode	Target Application
Micro / MEMS	< 1 mm	100 Hz - 10 kHz	TE + PZ	IoT sensors, implants
Miniature	1 - 10 mm	10 - 200 Hz	EI + GERTAM	Wearables, electronics
Portable	10 - 100 mm	1 - 50 Hz	EI + PZ	Battery replacement
Industrial	100 mm - 1 m	0.1 - 10 Hz	EI (primary)	Building / grid node
Utility	> 1 m	0.01 - 1 Hz	EI (grid)	Distributed baseload

11. COMPARISON WITH PRIOR ART

Table IV compares MEOOPS-MAG against the most directly competing motor-generator and energy harvesting technologies across key performance dimensions.

TABLE IV: MEOOPS-MAG vs. Prior Art

Technology	External Input	Moving Parts	i-Mod e	Scalability	Maint.
MEOOPS-MAG	None (magnets)	Minimal (osc.)	Yes (4+)	Micro-Utility	Very Low
Brushless DC Motor	External elec.	Yes (rotor)	No	Portable-Ind.	Medium
Generator (conv.)	Fuel/hydro	Yes (rotating)	No	Portable-Util.	High
Linear Actuator	External elec.	Yes (piston)	No	Micro-Ind.	Medium
Solar + Inverter	Solar	None	No	Micro-Util.	Low
Wind Turbine	Wind velocity	Yes (rotating)	No	Med-Utility	High
TENG / PZ Harvester	Ambient	Minimal	No	Micro-Port.	Very Low

12. APPLICATIONS

A. Electric Vehicle Propulsion

MEOOPS-MAG in Motor mode provides a novel propulsion mechanism for electric vehicles, eliminating range anxiety by supplying continuous mechanical torque from the permanent magnet oscillation core rather than from a depleting battery charge. Arrays of MEOOPS-MAG units in parallel drive train configurations can deliver automotive-grade torque and power without onboard fuel tanks or large battery packs.

B. Drop-in Battery Replacement

MEOOPS-MAG in Generator mode, packaged to standard cylindrical cell dimensions, replaces conventional electrochemical batteries in consumer electronics, power tools, remote monitoring stations, emergency lighting, and grid-edge IoT devices. Unlike electrochemical cells, MEOOPS-MAG provides indefinitely renewable output without chemical depletion, capacity fade, or disposal hazards.

C. Distributed Grid Augmentation

Utility-scale MEOOPS-MAG Generator arrays can provide continuous, weather-independent baseload power to supplement intermittent solar and wind generation. Unlike gas peaker plants, MEOOPS-MAG nodes require no fuel supply, produce no emissions, and can be sited at any location regardless of solar or wind resource.

D. Aerospace and Deep Space

The absence of consumable propellants, chemical reactants, or external energy inputs makes MEOOPS-MAG attractive for spacecraft attitude control, deep-space mission power supply, and planetary rover propulsion, where indefinitely renewable mechanical-electrical transduction is mission-critical and resupply is impossible.

E. Biomedical Implants

At micro-scale, MEOOPS-MAG MEMS implementations can power pacemakers, neural stimulators, cochlear implants, and drug delivery pumps without battery replacement surgery, leveraging the established biocompatibility of pyrolytic carbon (clinically proven in prosthetic heart valves) and sucrose crystal materials.

13. LIMITATIONS, OPEN QUESTIONS, AND FUTURE

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WORK

A. Thermodynamic Energy Balance

The second law of thermodynamics requires that total work extracted must ultimately draw on the magnetic potential energy of the permanent magnets. Long-duration experimental testing to quantify NdFeB demagnetization rates under MEOOPS-MAG operating conditions is an essential next step. High-coercivity NdFeB (H_ci > 2,000 kA/m) and SmCo magnets are expected to provide operationally viable lifetimes exceeding 10-20 years.

B. Pyrolytic Carbon Durability Under Cycling

Pyrolytic carbon has relatively low fracture toughness (K_IC ~ 0.5-1.0 MPa*m^0.5). High-cycle bellow valve operation requires careful compressive stress management below the material compressive strength (~100 MPa). Pyrolytic carbon composite structures or PC-polymer hybrids may improve cycle life for high-frequency applications.

C. Third-Party Prototype Validation

Independent laboratory replication by third-party researchers equipped with precision magnetometry, motion capture, and electrochemical analysis is required to provide peer-reviewed experimental validation of the claimed oscillation and multi-mode output mechanisms. The inventor is pursuing structured collaboration with university laboratories to achieve this milestone.

D. GERTAM Electrochemical Characterization

GERTAM prototype electrochemical characterization -- including impedance spectroscopy, galvanostatic cycling, and chronopotentiometry -- is required to validate the triboelectric recharge mechanism and quantify cell voltage, current density, internal resistance, and cycle life in integrated MEOOPS-MAG conditions.

14. CONCLUSION

MEOOPS-MAG represents a novel integration of permanent-magnet oscillation technology into a practical, cylindrical battery-form-factor device capable of operating as a motor, voltage amplifier, or generator from a single hardware platform. Driven by the MEOOPS octagonal oscillation core -- itself powered by the Laithwaite Flux Decoupling Effect gated through pyrolytic carbon flux valves -- MEOOPS-MAG requires no external chemical, solar, wind, or kinetic energy input.

The multi-mode energy transduction architecture -- combining electromagnetic induction, piezoelectric sucrose compression, triboelectric PTFE-contact generation, and GERTAM valence electron harvesting -- maximizes electrical output across all scale classes from MEMS to utility grade. Programmable frequency control via servo-adjustable pyrolytic carbon valve apertures enables real-time adaptation to load conditions in all three operating modes.

If the claimed oscillation mechanism is validated at prototype scale through independent third-party experimentation, MEOOPS-MAG could establish a new paradigm in distributed energy, motor-generator, and portable power technology -- providing continuously renewable, fuel-free, low-maintenance power across the full spectrum from biomedical implants to utility-scale grid nodes.

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REFERENCES

1. G. Spaulding, 'MEAMOMU: Supplement A1-2022 Valance Electrons Harvesting Modules,' Global Journal of Engineering and Technology (GJET), Vol. 2, Issue 2, Feb. 2023, GSAR Publishers.
2. G. Spaulding, 'MEAMOMU same polarity coupler in a vacuum tube model,' Presented at: 3rd International Conference on Renewable Energy and Sustainable Technologies, Online, 2022.
3. G. Spaulding, 'MEOOPS-MAG (Motor, Amplifier, Generator),' NASA Tech Briefs / SAE Media Group Create the Future Design Contest, Entry No. 13925, Apr. 2026.
4. G. Spaulding, 'Magnetic Energy Oscillator for Output Power Source (MEOOPS),' WDCD Clean Energy Challenge, Magnetic Voltage Source, Sunrise, FL, USA.
5. G. Spaulding, Written Public Comments to PCAST on MEAMOMU, University of Arizona WRRC archive, Jul. 2024.
6. E. R. Laithwaite, Royal Institution Christmas Lectures, London, 1974-1977.
7. General Electric, 'Excursions in Science, No. 2: Magnets,' GE Educational Films, 1959.
8. UCLA Physics and Astronomy Dept., Laboratory demonstrations of diamagnetic levitation of pyrolytic carbon and bismuth, 2010-present.
9. Z. L. Wang, 'Triboelectric nanogenerators as new energy technology and self-powered sensors,' Faraday Discussions, vol. 176, pp. 447-458, 2014.
10. K&J; Magnetics, 'Diamagnetism and Levitation,' kjmagnetics.com/blog, accessed 2026.
11. L. Minati et al., 'Controlling the motional quality factor of a diamagnetically levitated resonator,' Macquarie University, 2021.
12. Penn State University, 'Electric eel biology inspires powerful gel battery,' PSU News Release, Aug. 2024.
13. MDPI, 'Development of a New Hydrogel Anion Exchange Membrane,' Membranes, vol. 12, no. 10,

*Corresponding Author: Gregory Spaulding

p. 984, 2022.
14. Spaulding, 'Magnetic Energy Automaton Mechanical Oscillator for Multiple Uses,' ResearchGate, Mar. 2024

*Corresponding Author: Gregory Spaulding