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https://doi.org/10.26069/greynet-2026-000.929-gn

Improving the Quality of Scientific Repositories Using AI

8 June 2026

Brian Bales, AI and Automation Consultant, IAEA

About INIS

https://doi.org/10.26069/greynet-2026-000929-gn

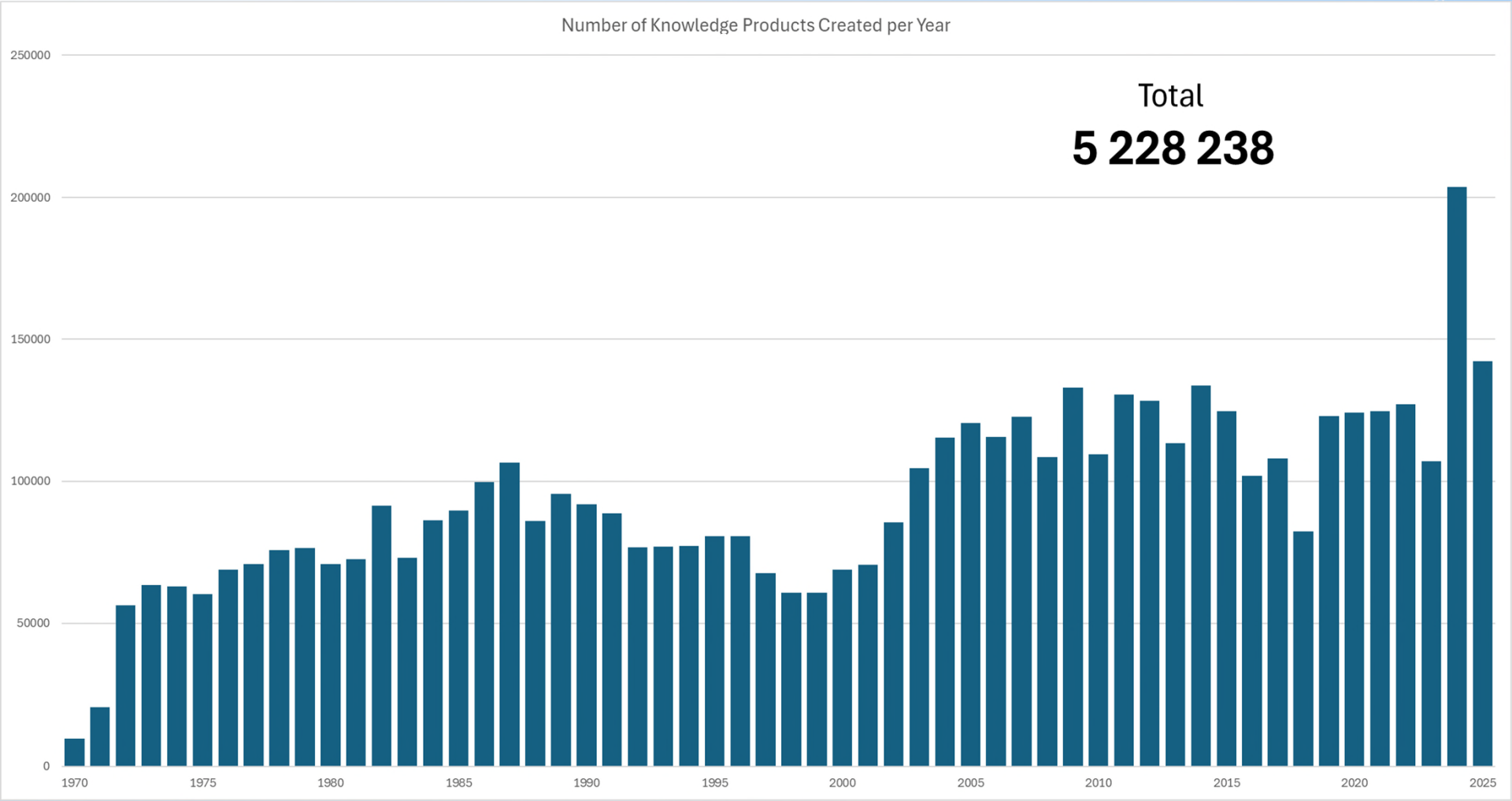
- Founded 1970
- Member States contribute knowledge products in nuclear science and technology
- INIS Unit adds harvested materials from publishers
- Surpassed 5 million knowledge products in 2025 (55th year of operation)
- ~4.9 million unique users last year

Why AI?

https://doi.org/10.26069/greynet-2026-000.929-gn

- Automate repetitive information management workflows
- Budget pressures make efficiency and scalability essential
- Improve both the quantity and quality of repository content
- Enable enrichment, discoverability, and continuous quality improvement

Transforming repositories from passive archives into intelligent knowledge systems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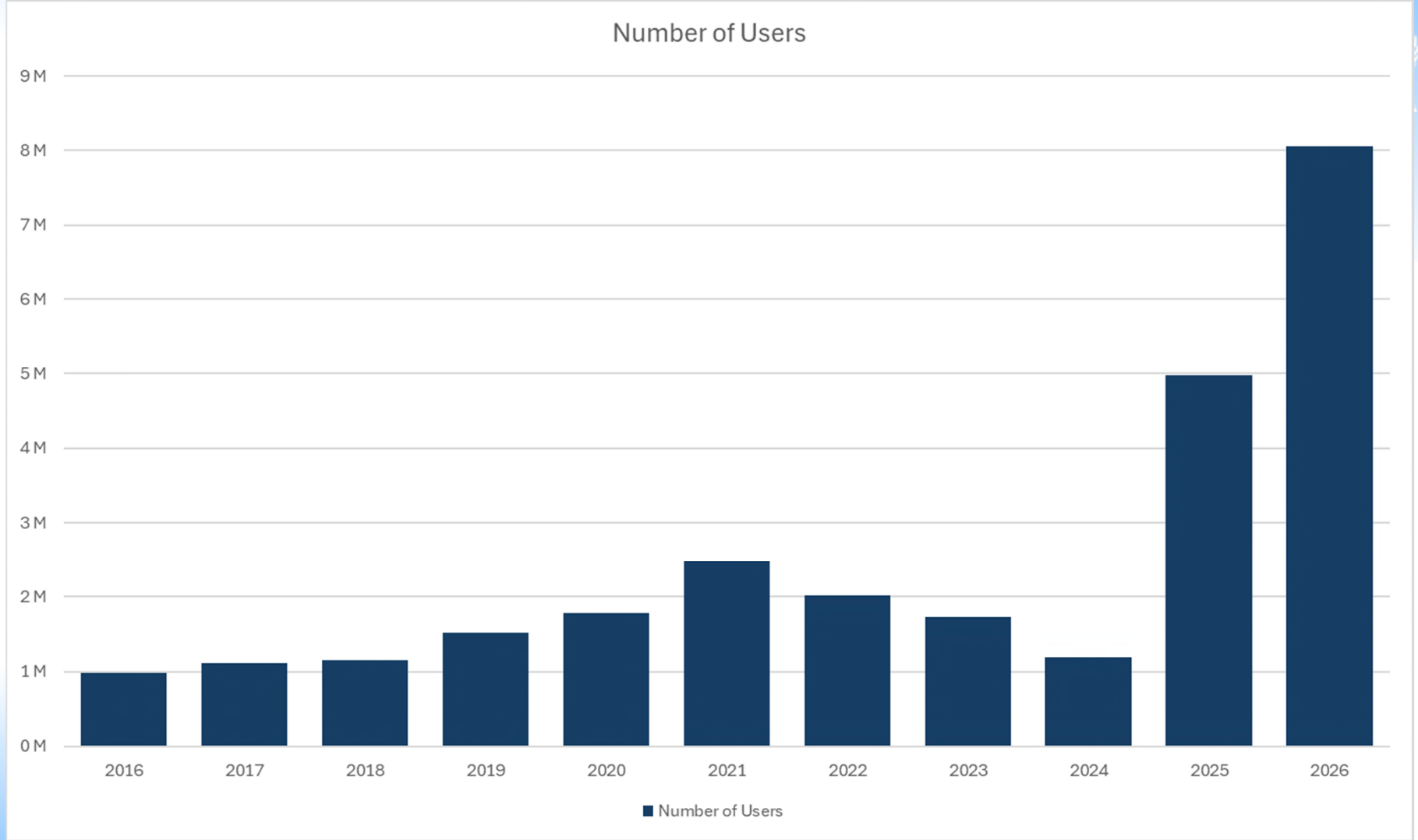
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2026
Number of Users

https://doi.org/10.26069/greynet-2026-000.929-gn

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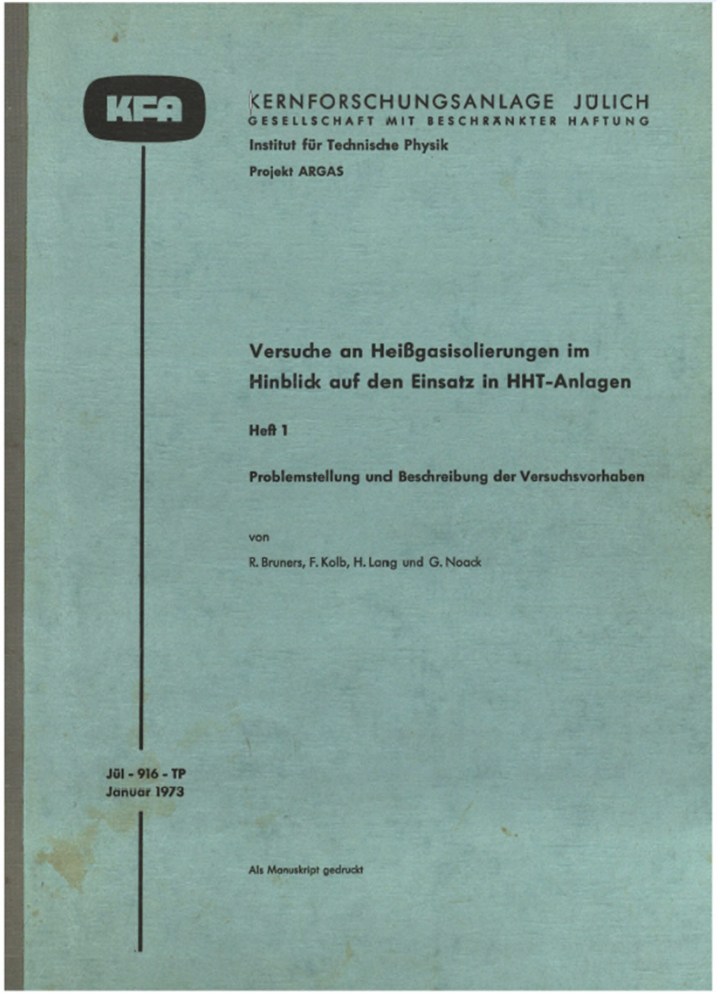

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GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG
Institut für Technische Physik
Projekt ARGAS

Versuche an Heißgasisolierungen im Hinblick auf den Einsatz in HHT-Anlagen

Heft 1

Problemstellung und Beschreibung der Versuchsvorhaben

von
R. Bruners, F. Kolb, H. Lang und G. Noack

Jül - 916 - TP
Januar 1973

Als Manuskript gedruckt

KERNFORSCHUNGSANLAGE JOLICH
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Versudte an Hel8gasisolierungen im
:Hittb1ick auf den Einsatz hL:HHl-Antagen
Als ~pt
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Nr. 916
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Dolc.1 Thermal Insulation - Pipe
Thermal Insulation - HHT
Thermal Insulation - Reactor, High Temperature
Reactor, High Temperature - Thermal Insulatian
Pipe -Thermal Insulation
HHT - Thermal Insulation
Im Tausch zu beziehen durch: ZENTRALBIBUOTHEK der Kemfonchungsanlage JOlich GmbH,
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~ersuche an Heißgasisolierungen im
Hinblick auf den Einsatz in HHT-Anlagen
Heft 1
Problemstellung und Beschreibung der Versuchsvorhaben
von
R. Bruners, F. Kolb1), H. Lang und G. Noack2)
1) Hochtemperaturreaktorbau GmbH
1} Kernforschungsanlage Jülich GmbH
Dieser Bericht erscheint gleichzeitig als interner Bericht Nr. E 11-7311 der Firma HRB
Die Arbeit ist im Rahmen der Zusammenarbeit zwischen den Firmen
HRB und KFA über Versuche für das HHT-Proje~t unter Förderung
durch Mittel des Bundesministers für Bildung und Wissenschaft
entstanden. Die beschriebenen Versuchsvorhaben zur Erprobung
von Heißgasisolierungen werden am ITP der KFA Jülich gemeinsam
mit der Versuchsabteilune der Firma HRB in Jülich durchgeführt.
Eine Haftung für die Richtigkeit der in diesem Bericht genannten
Daten, ~onstruktionen und Verfahren wird nicht übernommen.
Die Autoren möchten an dieser Stelle dankend auf den maßgeblichen
Anteil der Konstruktionsbüros von HRB und ITP an den diesem Be-

Structured Metadata (JSON)

https://doi.org/10.21926069/greynet-2026-000.929-gn


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Ingested Record

https://doi.org/10.26069/greynet-2026-000.929-gn

Published November 1, 1973 | Version v1

Report Open

Experiments on High-Temperature Gas Insulations with a View to Their Use in HHT Systems

Bruners, R.[1]; Kolb, F.[2]; Lang, H.[2]; Noack, G.[2]; Kernforschungsanlage Jülich GmbH, Jülich (Germany)

Hide affiliations

1. Hochtemperaturreaktorbau GmbH
2. Kernforschungsanlage Jülich GmbH

[Automatically extracted and translated] This report examines the challenges and experimental approaches related to high-temperature gas insulation in HHT systems. It discusses the requirements for gas piping and insulation, the state of the art in insulation technologies, and the planned experimental setups for testing insulation performance under realistic conditions. The report emphasizes the importance of achieving high operational reliability and minimizing thermal losses while addressing the mechanical and material challenges posed by high temperatures and pressures.

Abstract (German)

[Automatisch extrahiert und übersetzt] Dieser Bericht untersucht die Herausforderungen und experimentellen Ansätze im Zusammenhang mit Heißgasisolierungen in HHT-Systemen. Es werden die Anforderungen an Gasleitungen und Isolierungen, der Stand der Technik bei Isolierungstechnologien und die geplanten experimentellen Aufbauten zur Prüfung der Isolierungsleistung unter realistischen Bedingungen erörtert. Der Bericht betont die Bedeutung einer hohen Betriebssicherheit und der Minimierung von Wärmeverlusten, während die mechanischen und materialtechnischen Herausforderungen durch hohe Temperaturen und Drücke behandelt werden.

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Published November 1, 1973 | Version v1

Report Open

Experiments on High-Temperature Gas Insulations with a View to Their Use in HHT Systems

Bruners, R.[1]; Kolb, F.[2]; Lang, H.[2]; Noack, G.[2]; Kernforschungsanlage Jülich GmbH, Jülich (Germany)

Hide affiliations

1. ROR Hochtemperaturreaktorbau GmbH, Mannheim, Germany
2. ROR Kernforschungsanlage Jülich GmbH, Jülich (Germany)

[Automatically extracted and translated] This report examines the challenges and experimental approaches related to high-temperature gas insulation in HHT systems. It discusses the requirements for gas piping and insulation, the state of the art in insulation technologies, and the planned experimental setups for testing insulation performance under realistic conditions. The report emphasizes the importance of achieving high operational reliability and minimizing thermal losses while addressing the mechanical and material challenges posed by high temperatures and pressures.

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Indexing (NADIA)

https://doi.org/10.26069/greynet-2026-000.929-gn

Published October 3, 2025 | Version v1

Conference paper | Open

Transforming INIS: Uses of AI in Information Management

Bales, Brian Paul[1]

Show affiliations

Since the 1950s, and before, artificial intelligence has cycled through repeated waves of enthusiasm, hype, and inevitable disappointment. In 1958, Frank Rosenblatt, inventor of the Perceptron, said that "we are about to witness the birth of such a machine—a machine capable of perceiving, recognizing and identifying its surroundings without any human training or control." (quoted in Lefkowitz, 2019) Like many other technologies, AI has followed a familiar path: initial excitement, followed by disillusionment, and finally, a productive phase of realistic expectations and practical integration.

In recent months, AI use in Information Management appears to be entering a productive phase. While many applications remain unsuited for AI, with appropriate caution and oversight, AI tools can be successfully incorporated into IM workflows. This paper will present five current use cases illustrating successful integration and explore two prospective applications that hold promise for future development.

Indexing (NADIA)

https://doi.org/10.26069/greynet-2026-000.929-gn

Identifiers

DOI
10.26069/greynet-2025-000.762-gn;

Conference

Title
PISA 2025: How Scientific Communication Practices are Evolving

Dates
5-7 May, 2025

Place
Pisa, Italy

Website
https://www.greynet.org/conference/papers.html

INIS

Country of Publication
Netherlands

Country of Input or Organization
International Atomic Energy Agency (IAEA)

Subject category
S99: GENERAL AND MISCELLANEOUS; S97: MATHEMATICAL METHODS AND COMPUTING;

Descriptors DEI
COMMUNICATIONS; COMPUTER NETWORKS; CONTROL; E-LEARNING; EDUCATIONAL FACILITIES; HISTORICAL ASPECTS; INFORMATION; INIS; MANAGEMENT; PERSONNEL; TECHNOLOGY ASSESSMENT; TRAINING; USES

Descriptors DEC
EDUCATION; INFORMATION SYSTEMS; LEARNING; TRAINING

https://doi.org/10.26069/greynet-2026-000.929-gn

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• https://inis.iaea.org/records/akrpg-dgy83

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• https://inis.iaea.org/records/vrwez-ktr86
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Before

Published March 2025 | Version v1

Journal article Open

NATURAL HYBRIDIZATION BETWEEN ANCIENTLY DIVERGENT *HIPPOPHAE TIBETANA* AND *H. NEUROCARPA* (ELAEAGNACEAE) IN THE EASTERN MARGIN OF THE QINGHAI-TIBET PLATEAU

ZHANG, H[1]

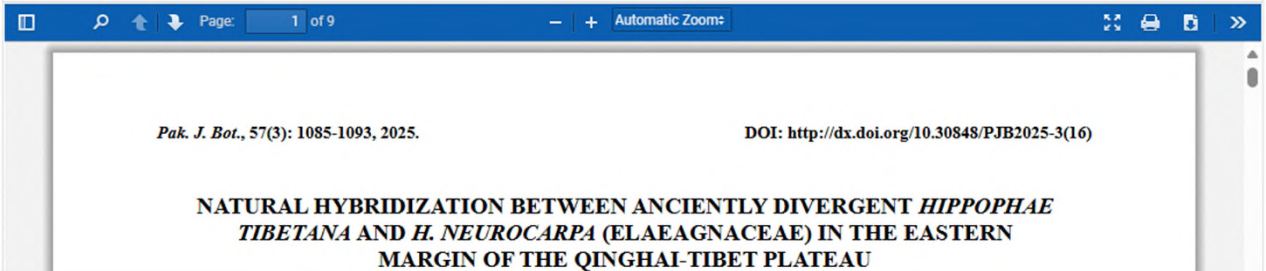
Hide affiliations

1. College of Life Sciences, Northwest Normal University, Lanzhou 730070, China

It is well-regarded that young species are apt to mix their genomes through natural hybridization, whereas the hybridization of old species is rare due to acquired intrinsic reproductive isolation, and alternatively the challenges in detection. In the present study, we identified a hybrid zone of the basal taxon Hippophae tibetana mating with H. neurocarpa based on morphological and molecular evidence in Hippophae. The putative hybrid plants were first discriminated from the sympatric congeneric populations in a field survey, relying on their morphological intermediates of fruit and leaf between the putative parents. Then additivity of the biparental distinctive nucleotide signals of ITS and CHSi, as well as the intermediate features of SSR markers and cpDNA trnS-trnG detected in putative hybrid individuals subsequently, comprehensively support the natural hybridization event that historically occurred. We further estimated that H. tibetana and H. neurocarpa had diverged 26~27 MYA and hybridization occurred 0.1~0.2 MYA, far from the widely reviewed 5-10 MYA to waiting for hybrid sterility. This is the deepest hybridization event in seed plants studied so far. We speculate that both perennial woody trees and abiotic pollination mechanisms are mainly responsible for the slow evolution of reproductive incompatibility in the genus. Our findings shed light on the incomplete reproductive isolation barriers between members of Hippophae, promoting regular hybridization and hybrid speciation in the margins of the Qinghai-Tibet Plateau.

Files

1085-1093.pdf



After

Published March 2025 | Version v1

Journal article Open

Natural Hybridization Between Anciently Divergent *Hippophae tibetana* and *H. neurocarpa* (Elaeagnaceae) in the Eastern Margin of the Qinghai-Tibet Plateau

Zhang, H[1]

Show affiliations

It is well-regarded that young species are apt to mix their genomes through natural hybridization, whereas the hybridization of old species is rare due to acquired intrinsic reproductive isolation, and alternatively the challenges in detection. In the present study, we identified a hybrid zone of the basal taxon Hippophae tibetana mating with H. neurocarpa based on morphological and molecular evidence in Hippophae. The putative hybrid plants were first discriminated from the sympatric congeneric populations in a field survey, relying on their morphological intermediates of fruit and leaf between the putative parents. Then additivity of the biparental distinctive nucleotide signals of ITS and CHSi, as well as the intermediate features of SSR markers and cpDNA trnS-trnG detected in putative hybrid individuals subsequently, comprehensively support the natural hybridization event that historically occurred. We further estimated that H. tibetana and H. neurocarpa had diverged 26~27 MYA and hybridization occurred 0.1~0.2 MYA, far from the widely reviewed 5-10 MYA to waiting for hybrid sterility. This is the deepest hybridization event in seed plants studied so far. We speculate that both perennial woody trees and abiotic pollination mechanisms are mainly responsible for the slow evolution of reproductive incompatibility in the genus. Our findings shed light on the incomplete reproductive isolation barriers between members of Hippophae, promoting regular hybridization and hybrid speciation in the margins of the Qinghai-Tibet Plateau.

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Page: 1 of 9 Automatic Zoom

Pak. J. Bot., 57(3): 1085-1093, 2025. DOI: http://dx.doi.org/10.30848/PJB2025-3(16)

NATURAL HYBRIDIZATION BETWEEN ANCIENTLY DIVERGENT *HIPPOPHAE TIBETANA* AND *H. NEUROCARPA* (ELAEAGNACEAE) IN THE EASTERN MARGIN OF THE QINGHAI-TIBET PLATEAU

https://doi.org/10.26069/greynet-2026-000.929-gn

Enhancing Legacy Records

Published 1970 | Version v1

Journal article | Metadata-only

Spectroscopic investigations in the systems MeUO4-ThO2 with Me=Nd, Gd, Dy, Ho, Yb, and Y

Kemmler-Sack, S.[1]; Ruedorff, W.[1]

Show affiliations

no abstract available

Additional details

Additional titles

Original title (German)
Spektroskopische Untersuchungen in den Sytemen MeUO

Publishing Information

Journal Title
Z. Naturforsch., B

Journal Volume
25

Journal Issue
9

Series
Z. Naturforsch., B.

Journal Page Range
905-910

INIS

Country of Publication
Germany

Country of Input or Organization
Germany

INIS RN
2007506

Subject category
S36: MATERIALS SCIENCE;

Spectroscopic investigations in the systems MeUO4-ThO2 with Me=Nd, Gd, Dy, Ho, Yb, and Y

Kemmler-Sack, S.[1]; Ruedorff, W.[1]

Show affiliations

Spectroscopic investigations in the systems (Me 0.5 - x/2 U 0.5 - x/2 Th x) O 2 with Me = Nd, Gd, Dy, Ho, Yb, and Y show that the term splitting of uranium is not consistent with the presence of a cubic oxygen coordination. As a possible interpretation of the experimental material, the assumption of uranyl groups, UO 2 ®, is discussed.

Abstract (German)

Spektroskopische Untersuchungen in den Systemen (Me 0,5 - x/2 U 0,5 - x/2 Th x) O 2 mit Me = Nd, Gd, Dy, Ho, Yb und Y zeigen, daß die Termaufspaltung des Urans nicht mit dem Vorliegen einer würfelförmigen Sauerstoffkoordination in Einklang zu bringen ist. Als eine mögliche Deutung des experimentellen Materials wird die Annahme von Uranylgruppen, UO 2 ® , diskutiert.

Files

yzrv1-83k67.pdf

Page: 1 of 6 — Automatic Zoom

6722 [1968].
[7] J. D. DUNITZ and V. PRELOG, Angew. Chem. **80**, 700 [1968].
Amer. chem. Soc. **91**, 7031 [1969].
[9] R. S. BERRY, J. chem. Physics **32**, 933 [1960].

Spektroskopische Untersuchungen in den Systemen $MeUO_4-ThO_2$ mit Me = Nd, Gd, Dy, Ho, Yb und Y

SIBYLLE KEMMLER-SACK und WALTER RÜDORFF

Laboratorium für Anorganische und Analytische Chemie der Universität Tübingen

Herrn Professor Dr. EUGEN MÜLLER *zum 65. Geburtstag gewidmet*

(Z. Naturforsch. **25 b**, 905—910 [1970]; eingegangen am 13. Mai 1970)

Spektroskopische Untersuchungen in den Systemen $(Me_{0,5-x/2}U_{0,5-x/2}Th_x)O_2$ mit Me = Nd, Gd, Dy, Ho, Yb und Y zeigen, daß die Termaufspaltung des Urans nicht mit dem Vorliegen einer würfelförmigen Sauerstoffkoordination in Einklang zu bringen ist. Als eine mögliche Deutung des experimentellen Materials wird die Annahme von Uranylgruppen, $UO_2^{\oplus}$, diskutiert.

In den Systemen $MeO_{1,5-x}-UO_3-O_2$ (Me = eines Würfels umgeben sind. Die obengenannten

Optional Information

Notes

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https://doi.org/10.26069/greynet-2026-000.929-gn

Much of this project is procedural/non-AI but AI is used in these cases, when procedural methods do not work:

- Identifying article matches from Crossref and other sources
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- Translations are created for non-English abstracts
- To construct/convert formulas from Tex to MathML

Electron capture collisions between Na+ and O2, N2, and CO in the energy range 0.1--1 keV

Odom, R.[1]; Siedler, D.[1]; Weiner, J.[1]

Show affiliations

Absolute cross sections for charge transfer into several excited levels of sodium have been determined over the energy range 0.1-1 keV. The energy dependence of all cross sections appears to follow the form $\ensuremath{\sigma}(v,\ensuremath{\Delta}E)=K{e}^{\frac{\ensuremath{-}\ensuremath{\Delta}\mathrm{Ea}}{\ensuremath{\hbar}v}}$, where v is the ion velocity and $\ensuremath{\Delta}E(n,l)$ is the "energy defect" for charge transfer into n, l excited levels of sodium. This experiment is the first test of the adiabatic hypothesis in which v and $\ensuremath{\Delta}E$ can be treated in the above expression essentially as independent variables. We find that at constant v, relative magnitudes of electron-capture cross sections are governed by the energy defect without regard to principal quantum number or angular momentum of the final state. This functional dependence is discussed in terms of a semiclassical coupled harmonic oscillator model.

Electron capture collisions between Na+ and O2, N2, and CO in the energy range 0.1--1 keV

Odom, R.[1]; Siedler, D.[1]; Weiner, J.[1]

Show affiliations

Absolute cross sections for charge transfer into several excited levels of sodium have been determined over the energy range 0.1-1 keV. The energy dependence of all cross sections appears to follow the form σ(v, ΔE) = K e^(−ΔEa/(ħ v)), where v is the ion velocity and ΔE(n,l) is the "energy defect" for charge transfer into n, l excited levels of sodium. This experiment is the first test of the adiabatic hypothesis in which v and ΔE can be treated in the above expression essentially as independent variables. We find that at constant v, relative magnitudes of electron-capture cross sections are governed by the energy defect without regard to principal quantum number or angular momentum of the final state. This functional dependence is discussed in terms of a semiclassical coupled harmonic oscillator model.

https://doi.org/10.26069/greynet-2026-000.929-gn

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GENERAL RECOMMENDATIONS:
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  - Out of scope: Focuses solely on clinical neurology and autoimmune treatment without nuclear science applications.

Brazilian consensus recommendations on the diagnosis and treatment of autoimmune encephalitis in the adult and pediatric populations

Dutra, Lívia Almeida[1]; Silva, Pedro Victor de Castro[1]; Ferreira, João Henrique Fregadolli[1]; And others

Show affiliations

Background Autoimmune encephalitis (AIE) is a group of inflammatory diseases characterized by the presence of antibodies against neuronal and glial antigens, leading to subacute psychiatric symptoms, memory complaints, and movement disorders. The patients are predominantly young, and delays in treatment are associated with worse prognosis. Objective With the support of the Brazilian Academy of Neurology (Academia Brasileira de Neurologia, ABN) and the Brazilian Society of Child Neurology (Sociedade Brasileira de Neurologia Infantil, SBNI), a consensus on the diagnosis and treatment of AIE in Brazil was developed using the Delphi method. Methods A total of 25 panelists, including adult and child neurologists, participated in the study. Results The panelists agreed that patients fulfilling criteria for possible AIE should be screened for antineuronal antibodies in the serum and cerebrospinal fluid (CSF) using the tissue-based assay (TBA) and cell-based assay (CBA) techniques. Children should also be screened for anti-myelin oligodendrocyte glucoprotein antibodies (anti-MOG). Treatment should be started within the first 4 weeks of symptoms. The first-line option is methylprednisolone plus intravenous immunoglobulin (IVIG) or plasmapheresis, the second-line includes rituximab and/or cyclophosphamide, while third-line treatment options are bortezomib and tocilizumab. Most seizures in AIE are symptomatic, and antiseizure medications may be weaned after the acute stage. In anti-N-methyl-Daspartate receptor (anti-NMDAR) encephalitis, the panelists have agreed that oral immunosuppressant agents should not be used. Patients should be evaluated at the acute and postacute stages using functional and cognitive scales, such as the MiniMental State Examination (MMSE), the Montreal Cognitive Assessment (MoCA), the Modified Rankin Scale (mRS), and the Clinical Assessment Scale in Autoimmune Encephalitis (CASE). Conclusion The present study provides tangible evidence for the effective management of AIE patients within the Brazilian healthcare system.

https://doi.org/10.26069/greynet-2026-000.929-gn

Improving Indexing & Retrieval

https://doi.org/10.26069/greynet-2026-000.929-gn

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  - "RELAXATION TIME"

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  - "FLUORINE 18"
  - "FLUORODEOXYGLUCOSE"
  - "GERMANIUM 68"

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  - "COMPUTERIZED TOMOGRAPHY"
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- https://inis.iaea.org/records/tzd5c-t7q69
  - "PLATINUM CARBIDES"

Application of stable water isotopes in karst hydrogeology in snow and glacierized catchments of Kashmir Himalayas, India: A review

Jeelani, Ghulam [1]; Lone, Suhail A. [1]

Show affiliations

The development of isotope hydrology in Kashmir Himalayas is briefly reviewed. Annual and monthly variabilities of $\delta^{18}O$ and $\delta^{2}H$ relationships, the altitude effect, the temperature effect and amount effects were calculated. The studies suggested that the western disturbances (WDS) dominantly contribute greater than 70% to the water resources of the Kashmir Himalayas, while as Indian summer monsoons (ISM) contribute less than 30%. It was reported that the depleted isotopic values were observed in the headwaters of the streams/tributaries and enriched values at lower elevations. The stable water isotopic studies of karst springs have suggested that the flow in springs and streams is predominantly controlled by melting of winter snowmelt. The glacier melt contribution to the streams and springs is generally very low. The studies have summarized that the changing climate has a significant effect on the annual discharge of karst springs and isotopic composition of the glaciers. The longer mean residence time (MRT) of stream water was ascribed to complex topography and shorter mean residence time of groundwater is attributed to the significant karstification in the region.

Country of Publication
India

Country of Input or Organization
India

Subject category
S58: GEOSCIENCES; S54: ENVIRONMENTAL SCIENCES;

Descriptors DEI
ALTITUDE; DEUTERIUM; DISTURBANCES; GLACIERS; GROUND WATER; HIMALAYAS; HYDROLOGY; ISOTOPE APPLICATIONS; ISOTOPE RATIO; LEVELS; MELT-THROUGH; MONSOONS; SNOW; SPRINGS; TOPOGRAPHY; WATER RESOURCES

Descriptors DEC
ACCIDENTS; ATMOSPHERIC PRECIPITATIONS; BEYOND-DESIGN-BASIS ACCIDENTS; DIMENSIONLESS NUMBERS; HYDROGEN COMPOUNDS; HYDROGEN ISOTOPES; ISOTOPES; LIGHT NUCLEI; MACHINE PARTS; MELTDOWN; MOUNTAINS; NUCLEI; ODD-ODD NUCLEI; OXYGEN COMPOUNDS; REACTOR ACCIDENTS; RESOURCES; SEVERE ACCIDENTS; STABLE ISOTOPES; STORMS; WATER

NADIA 2 Result

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STATUS: Indexed
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INIS Summary

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SUBJECT_CATEGORIES: "S58 GEOSCIENCES, S07 ISOTOPES AND RADIATION SOURCES"
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DESCRIPTORS: "HYDROGEN ISOTOPES, OXYGEN ISOTOPES, ISOTOPE RATIO, GROUND WATER, HYDROLOGY, GLACIERS, SNOW, MONSOONS,
DISTURBANCES, CLIMATIC CHANGE, TOPOGRAPHY, RESIDENCE HALF-TIME, TRACER TECHNIQUES, WATER RESOURCES"
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BROADER_TERMS: "ATMOSPHERIC PRECIPITATIONS, DIMENSIONLESS NUMBERS, ISOTOPE APPLICATIONS, ISOTOPES, RESOURCES, STORMS, WATER,
HYDROGEN COMPOUNDS, OXYGEN COMPOUNDS"
```

Descriptors

hydrogen isotopes
ID 4560; confidence 100; LLM+Semantic
The record explicitly discusses δ2H and stable water hydrogen isotopes in hydrological studies.

oxygen isotopes
ID 7086; confidence 100; LLM
The record explicitly discusses δ18O and stable water oxygen isotopes in hydrological studies.

isotope ratio
ID 5044; confidence 100; All
Exact match for δ18O/δ2H relationships and isotopic composition analyses.

ground water
ID 4134; confidence 100; LLM+Semantic
The study examines karst groundwater flow and spring discharge in Himalayan catchments.

hydrology
ID 4570; confidence 100; LLM+Semantic
The work involves hydrogeological processes and catchment hydrology in karst terrain.

glaciers
ID 3995; confidence 100; Semantic
The record reviews glacierized catchments and glacier melt contributions.

snow
ID 9220; confidence 100; LLM
The study addresses snowmelt contributions and stable water isotopes from snow in catchments.

monsoons
ID 25474; confidence 100; LLM
Indian summer monsoon contributions to water resources are evaluated.

disturbances
ID 2717; confidence 100; BM25+LLM

climatic change
ID 25082; confidence 100; LLM

topography
ID 10344; confidence 100; BM25+LLM

residence half-time
ID 21656; confidence 100; BM25+LLM

Subject Categories

S58 - GEOSCIENCES
primary; confidence 90
The study focuses on hydrogeology and isotopic analysis in a geoscience context.

S07 - ISOTOPES AND RADIATION SOURCES
secondary; confidence 85
The work centers on the application of stable water isotopes.

Missing Term Suggestions

None returned.

Rejected Candidates

springs
ID 9397; LLM
Immediate broader term is 'machine parts'; too generic and not appropriate contextually.

Retrieval Augmented Generation (RAG) Indexing

https://doi.org/10.26069/greynet-2026-000.929-gn

IAEA

1. Embedding

Pre-embedded thesaurus
Semantic vectors in 768 dimensions

2. LLM Proposal

Up to 30 candidate terms
No thesaurus constraint

3. Normalization

Normalize isotopes/elements

embed proposal, title, abstract

4. Hybrid Retrieval

Semantic + lexical search
Nearest semantic distance – up to 200 terms proposed

5. Final Selection

LLM selects best 30

Concepts, methods, materials, geography

Result

https://doi.org/10.26069/greynet-2026-000.929-gn

- Marked improvement from NADIA
- Improved methodology, consistency
- Able to index lesser-known subjects
- Every choice explained
- Able to suggest thesaurus improvements

- Better than human indexing
- **Not in production** (2-5 cents per record)

Why does INIS avoid using retrieval augmented generation (RAG)?

Respond In

English

Ask

Answer

INIS avoids using Retrieval-Augmented Generation (RAG) for the public due to concerns about accuracy. The organization is focused on ensuring that the information it provides is trustworthy and usable, which involves structured automation and rigorous oversight. Their long-term vision includes developing systems that can deliver knowledge in a citation-backed and verifiable manner, but they are currently prioritizing accuracy and reliability in their information management practices [AI-InformationManagement.pdf, page 7].

Sources

AI-InformationManagement.pdf, page 7

Rerank 100; retrieved by bm25

citable, authoritative answer with the PDF as a base, instead of being presented only with that document. This space between information and knowledge, and between access and usefulness is where future AI tools used by INIS may find a very valuable role. INIS currently avoids Retrieval- Augmented Gen...

Why is the plumb pudding model?

Respond In

English

Ask

Answer

The "plum pudding" model is an early 20th-century atomic model proposed by J. J. Thomson, which depicted the atom as a positively charged sphere with negatively charged electrons embedded within it, resembling plums in a pudding. This model was widely accepted until it was challenged by Ernest Rutherford's experiments, which led to the development of the nuclear model of the atom, indicating a more complex internal structure. The transition from the plum pudding model to the nuclear model marked a significant advancement in the understanding of atomic structure [Nuclear physics - Wikipedia.pdf, page 1].

Sources

Nuclear physics - Wikipedia.pdf, page 1

Rerank 100; retrieved by bm25

lear physics to astrophysics, is crucial in explaining the inner workings of stars and the origin of the chemical elements. The history of nuclear physics as a discipline distinct from atomic physics, starts with the discovery of radioactivity by Henri Becquerel in 1896,[1] made while investigating...

Nuclear physics - Wikipedia.pdf, page 9

Why do Einstein and Hawking disagree?

Respond In

English

Ask

Answer

Einstein and Hawking disagree primarily due to their differing views on gravity and its effects in extreme conditions, such as black holes. Einstein's theory of general relativity describes gravity as a classical force, while Hawking's work introduces quantum mechanics into the discussion, particularly through the concept of Hawking radiation, which suggests that black holes can emit radiation and lose mass. This leads to a complex interplay between classical gravitational dynamics and quantum effects, resulting in unexpected behaviors in systems like black hole binaries, where both classical and semi-classical effects are at play [DE24F1956.pdf, page 1].

Sources

DE24F1956.pdf, page 1

Rerank 100; retrieved by bm25

--- PAGE 1 --- Eur. Phys. J. C (2023) 83:1025 https://doi.org/10.1140/epjc/s10052-023-12210-6 Regular Article - Theoretical Physics Einstein vs Hawking: black hole binaries and cosmological expansion Aurélien Barrau1,a, Baptiste Blachier1,2,b, Maxime Lahlou3,c, Andrew Liu1,3,d, Killian Martineau1,e...

Please explain Schrödinger's Cat

Respond In

German

Ask

Answer

Schrödingers Katze ist ein Gedankenexperiment, das von Erwin Schrödinger im Jahr 1935 formuliert wurde, um die Prinzipien der Quantenmechanik zu veranschaulichen, insbesondere die Konzepte von Überlagerung und Messung. In diesem Experiment wird eine Katze in eine Kiste mit einem radioaktiven Atom, einem Geigerzähler und einem tödlichen Gift gesetzt. Wenn das Atom zerfällt, wird das Gift freigesetzt und die Katze stirbt; wenn nicht, bleibt die Katze am Leben. Nach den Regeln der Quantenmechanik ist die Katze bis zur Öffnung der Kiste in einem Überlagerungszustand, in dem sie gleichzeitig lebendig und tot ist. Dieses Experiment verdeutlicht die Paradoxien und die seltsame Natur der Quantenwelt.

Sources

10.3389_fphy.2025.1541888.pdf, page 11

Rerank 80; retrieved by bm25

Ebadi S, et al. Generation and manipulation of Schrödinger cat states in rydberg atom arrays. Science (2019) 365:570–4. doi:10.1126/science.aax9743 34. Lu M, Ville J-L, Cohen J, Petrescu A, Schreppler S, Chen L, et al. Multipartite entanglement in rabi-driven superconducting qubits. PRX Quan (2022)...

https://doi.org/10.26069/greynet-2026-000.929-gn

Please explain Schrödinger's Cat

Respond In

Korean

Ask

Answer

슈뢰딩거의 고양이는 양자역학의 개념을 설명하기 위해 제안된 사고 실험입니다. 이 실험에서는 고양이가 상자 안에 갇혀 있으며, 방사성 원자의 붕괴 여부에 따라 고양이가 살아있거나 죽어있는 상태로 존재한다고 가정합니다. 이 상태는 고양이가 관찰되기 전까지는 동시에 두 가지 상태에 있는 것으로 간주되며, 이는 양자 중첩의 원리를 보여줍니다. 이 개념은 양자역학의 비직관적인 특성을 강조하는 데 사용됩니다.

ORION Repository

https://doi.org/10.26069/greynet-2026-000.929-gn

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Transforming repositories from passive storage systems to active knowledge intelligence platforms

- Self-discovering
- Self-curating
- Self-healing
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- Self-evolving
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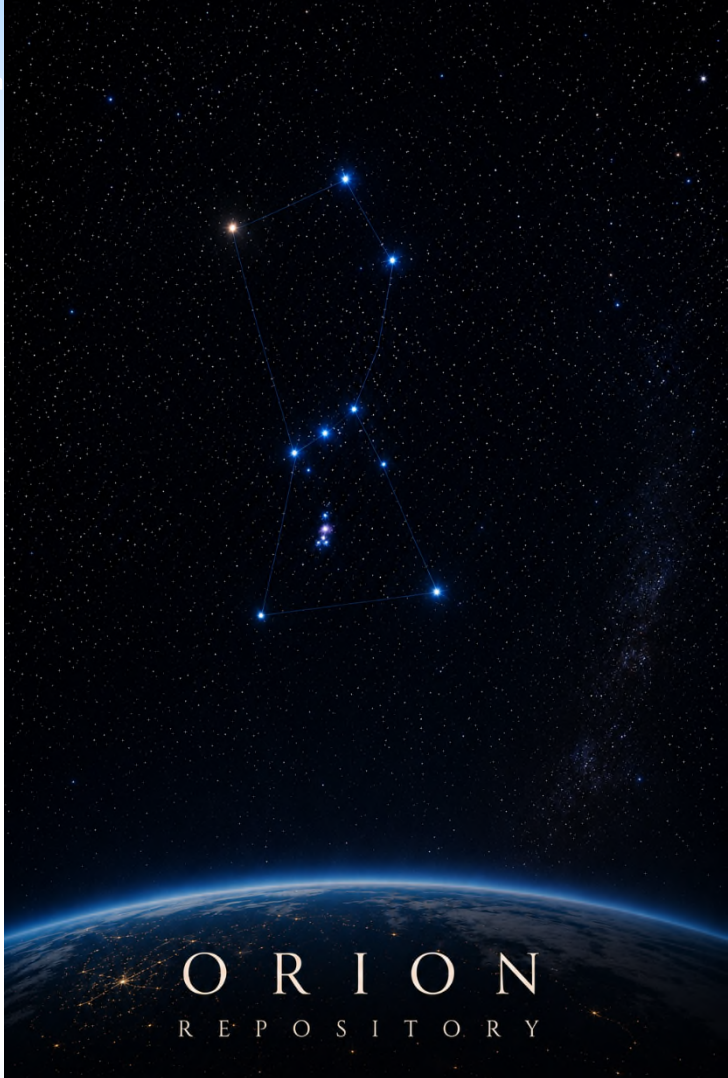
- Preservation-oriented
- Context-native RAG architecture
- Human-supervised autonomy
- Continuously verified
- Federated and interoperable
- Natively multi-lingual



IAEA
International Atomic Energy Agency
Atoms for Peace and Development

https://doi.org/10.26069/greynet-2026-000.929-gn

Thank you!