OUR MISSION:

to power humanity with clean, safe, net-zero energy that's accessible to all.

Alpha Ring™
CLEAN ENERGY NOW

ALPHA-E

The First and Only AI Powered Fusion Education System.

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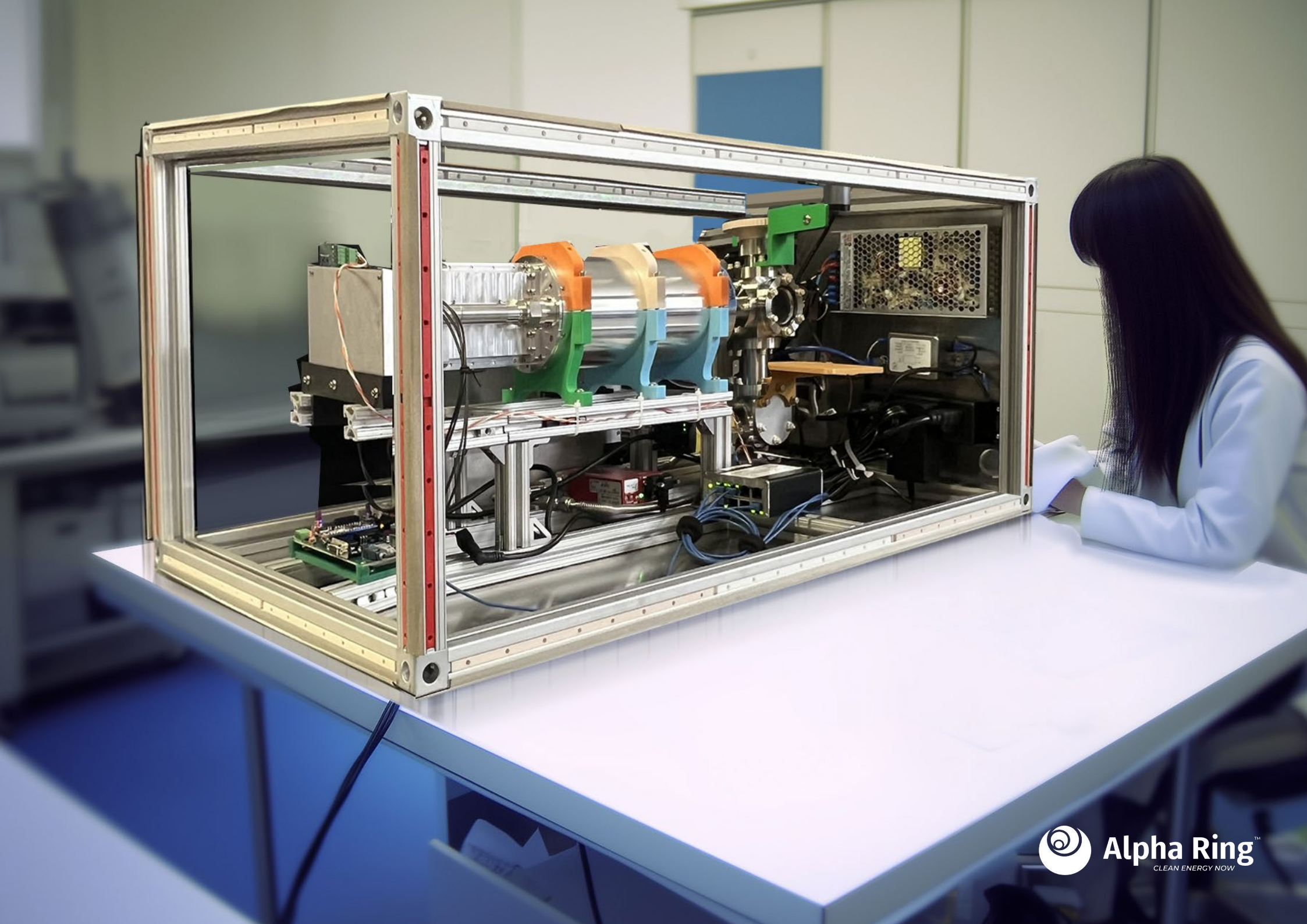
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The problem

Fusion energy has seen incredible growth in recent years and holds the potential to revolutionize our world by providing clean, limitless energy. Yet today, most universities teach fusion in theory only. This leaves many graduates with little or no hands-on experience – especially at undergraduate level. At the same time, while AI has the power to transform fusion technology, its potential is largely untapped in education and research.

The solution

Alpha Ring has developed Alpha-E, the world's first affordable, compact, and safe tabletop device that integrates AI and machine learning with fusion research. This breakthrough makes fusion more accessible than ever, empowering the next generation of fusion talent and driving fusion innovation.

Alpha-E is a complete turnkey system: it can be fully operational within hours of delivery and easily integrates with both standard and custom laboratory equipment for a wide range of applications.

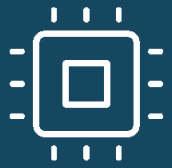
Applications

While Alpha-E is designed with universities and R&D laboratories in mind, its potential extends far beyond education. It also serves as a platform for leveraging AI, solving scientific and industrial challenges, and enabling advanced medical research.

Fusion Education

- Creates real deuterium-deuterium (D-D) and proton-boron (p-B) fusion reactions
- Observes fusion particles using multiple detectors
- Moves beyond theory with immersive, hands-on learning
- Builds knowledge and confidence to become the next generation of fusion experts

Scientific Research



- A powerful self-learning platform for researchers
- Generates rich datasets for AI and machine learning
- Accelerates discovery in fusion and particle physics
- Bridges experimentation with advanced data analysis

Applied Applications

- Elemental Analysis – identify and study the composition of materials
- Security Screening – apply advanced particle detection for safety and screening
- Cancer Therapy (BNCT / PBCT) – supports research into targeted medical applications, shortening the path from fusion science to life-saving treatment

What can be studied?

- RF & Microwave Electronics – generating and confining plasma
- High-Voltage Systems – creating and extracting ion beams
- Target Materials – exploring how materials influence fusion reactivity
- Vacuum Technology – designing and operating vacuum systems for experiments
- Fusion Physics – understanding cross-sections and particle diagnostics
- AI & Data Analysis – using CR-39 detectors with AI/deep learning for particle track analysis

Partners

Alpha Ring collaborates with leading universities and research institutes worldwide to advance fusion research, Alpha-E and its applications. Our partners include:

- University of California, Berkeley, USA
- University of Oxford, UK
- Purdue University, USA
- Nuclear Energy Research Institute (IPEN), Brazil
- National Cheng Kung University, Taiwan
- Sofia University, Bulgaria
- Macau University of Science and Technology, Macau
- Ricerca sul Sistema Energetico, RSE S.p.A., Italy
- University of Montenegro, Montenegro

ENDORSEMENTS:

"Alpha-E puts fusion into the hands of students and researchers at universities around the world. By providing the next generation of fusion experts with the ability to study reactions in real time, we can empower them to develop the skills and experience they will need to push the field forward."

Dr. Roger Falcone

Former President of the American Physical Society, Professor of Physics, UC Berkeley
CSO of Alpha Ring International

"Given the remarkable advances in fusion in the last 5 years, the compact Alpha-E accelerator is an important and novel tool. It adds to an exciting and rapidly advancing environment, by allowing students and new researchers, in a safe setting, the chance to obtain invaluable hands-on experience with basic fusion reactions and hardware, and with the advanced detector technology needed for detecting these fusion reactions. "

Dr. Richard Petrasso

Senior Scientist at MIT PSFC
and Head of the HED Physics Division

"Alpha-E gives academic institutions cost-effective access to a low-energy research accelerator that can be used to investigate material properties as well as low-energy nuclear reactions. This can become an invaluable tool for studies that otherwise would be very difficult to secure at much larger national and international facilities."

Dr. Gianluca Gregori

Professor of Physics, University of Oxford

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