
IOSONO
Festa dell@ Mia Parola
Carismi e Scienza per la Custodia del Creato
Sab. 25 Giu. 2016 ASSISI

Assisi, 25 giugno 2016 – Palazzo dei Priori

Carismi e Scienza per la custodia del Creato

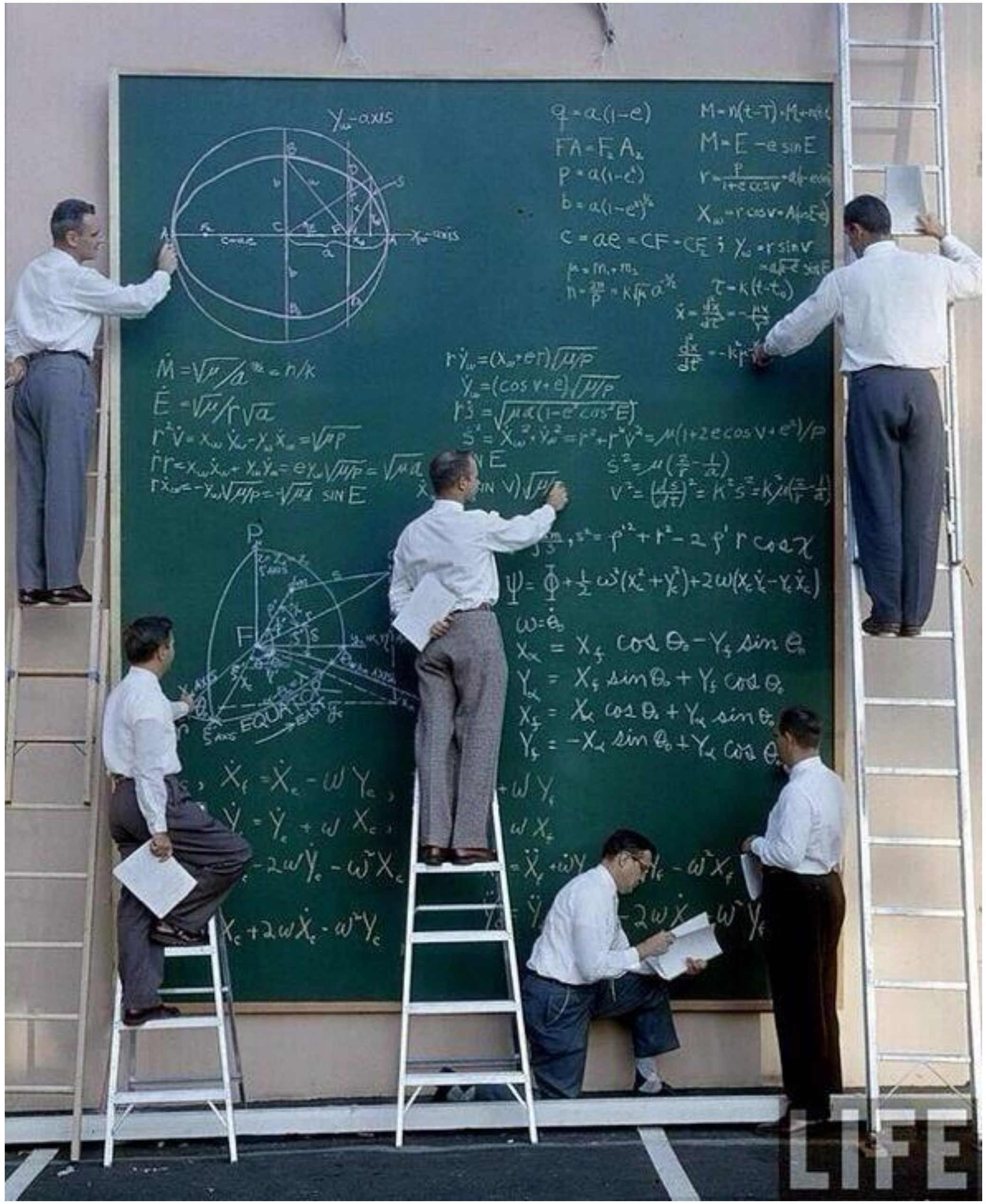
"Give me a neutron...."
Il processo HEE
come possibile candidato
ad una nuova tipologia di sintesi
di alcuni elementi.

Relatore Ugo Abundo

Open Power Association

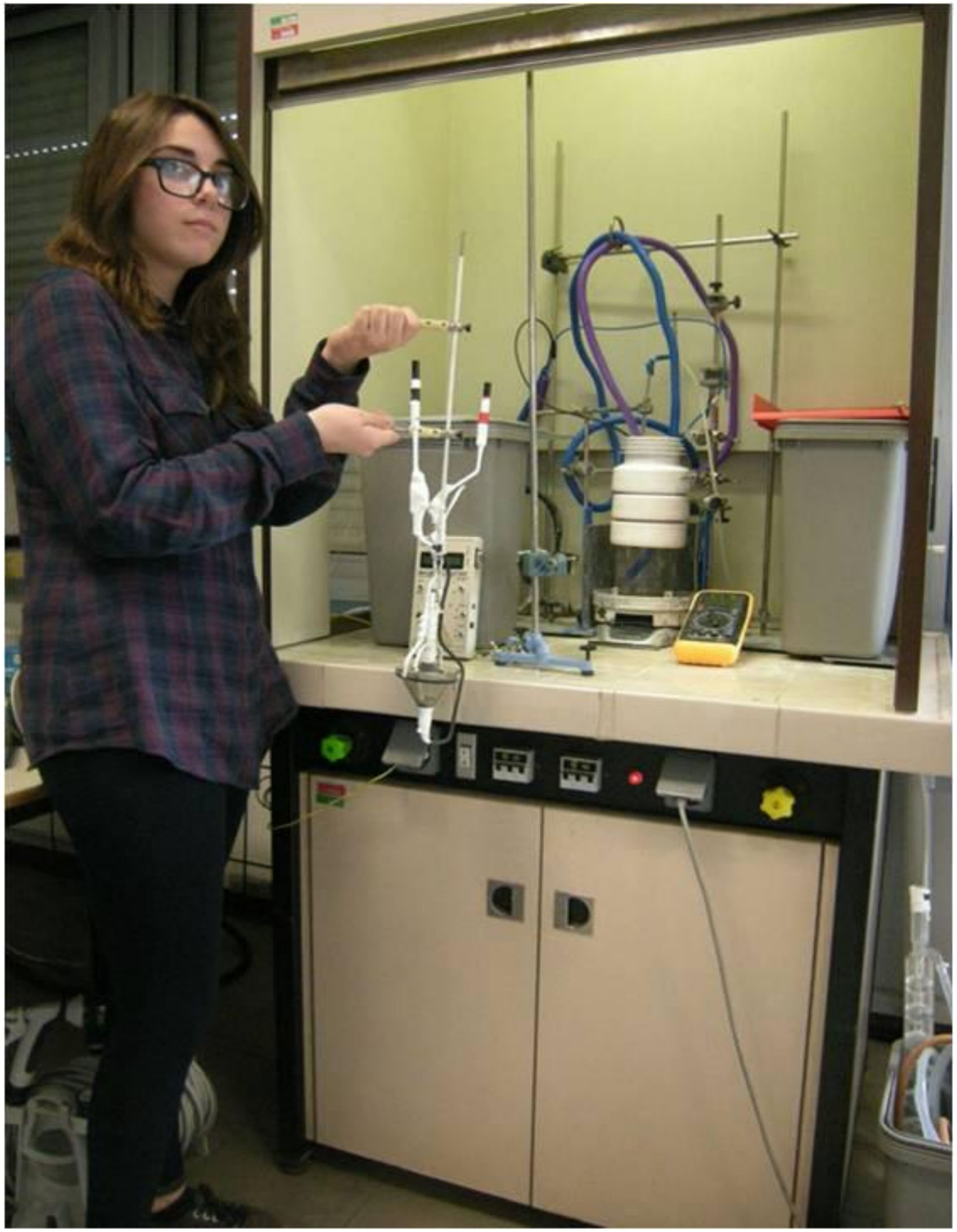
www.hydrobetatron.org

OPEN POWER LAB

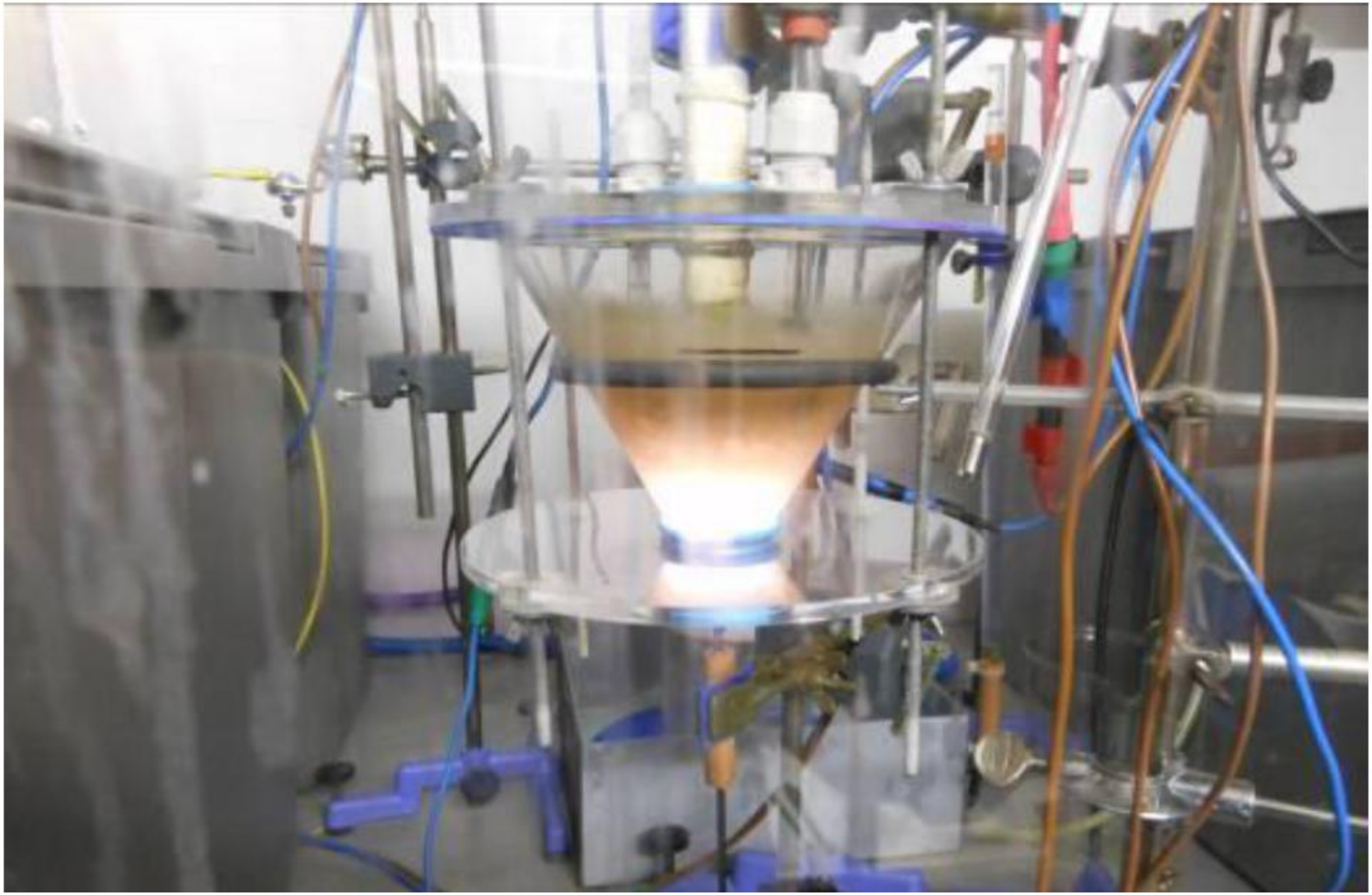


Open Power al lavoro…..

First Hydrobetatron



Lab IIS L. Pirelli



Hydrobetatron on fire

Ministero dello Sviluppo Economico
Ufficio Italiano Brevetti e Marchi

Domanda numero **102013902134034 (RM2013A000131)** Tipologia **Invenzioni**

N.B. *Non tutte le schede riportano la medesima struttura, essendo questa strettamente correlata alla tipologia.*
Dati aggiornati al **02 giugno 2016** (fonte: *www.uibm.gov.it*)

Data Deposito	N. Brevetto	Data Brevetto
06 marzo 2013	**0001416688**	**03 luglio 2015**
Stato Domanda	Anticipata accessibilità	Data di Pubblicazione
rilasciata	**no**	**27 ottobre 2013**

Titolo
catodo a letto fluido, apparecchio e procedura operativa per la sperimentazione e per la produzione industriale di eccesso di energia in plasma elettrolitico.

Titolare			Inventori
ISTITUTO DI ISTRUZIONE SUPERIORE " LEOPOLDO PIRELLI"	**ROMA**	**(RM)**	**ABUNDO UGO** **CIPRIANI PAOLA** **DE SANTIS ALESSANDRA** **PIERAVANTI PAOLA**

Domicilio elettivo	Indirizzo
BARZANO' & ZANARDO ROMA S.P.A.	**VIA PIEMONTE 26 - 00187 ROMA (RM)**

Centro raccolta colture microrganismi
-

CLASSI

Codice Classi
G21B

PRIORITÀ

Nazione	Numero domanda	Data domanda
ITALIA (IT)	**RM2012A000181**	**26 aprile 2012**

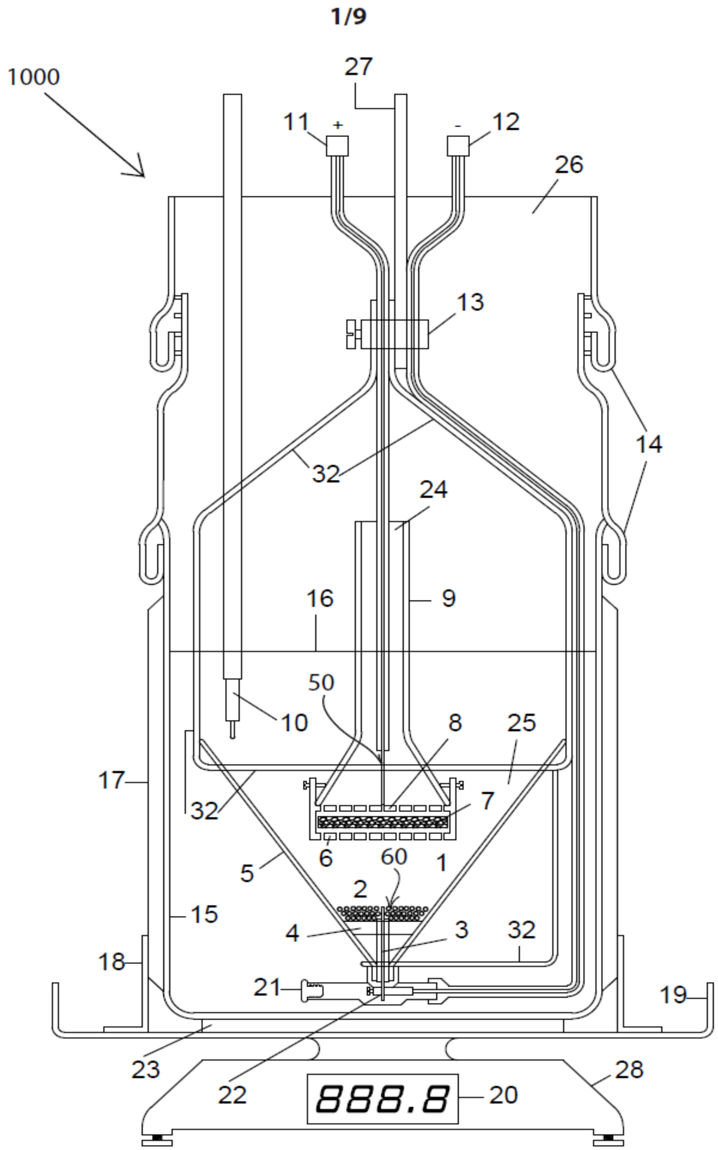
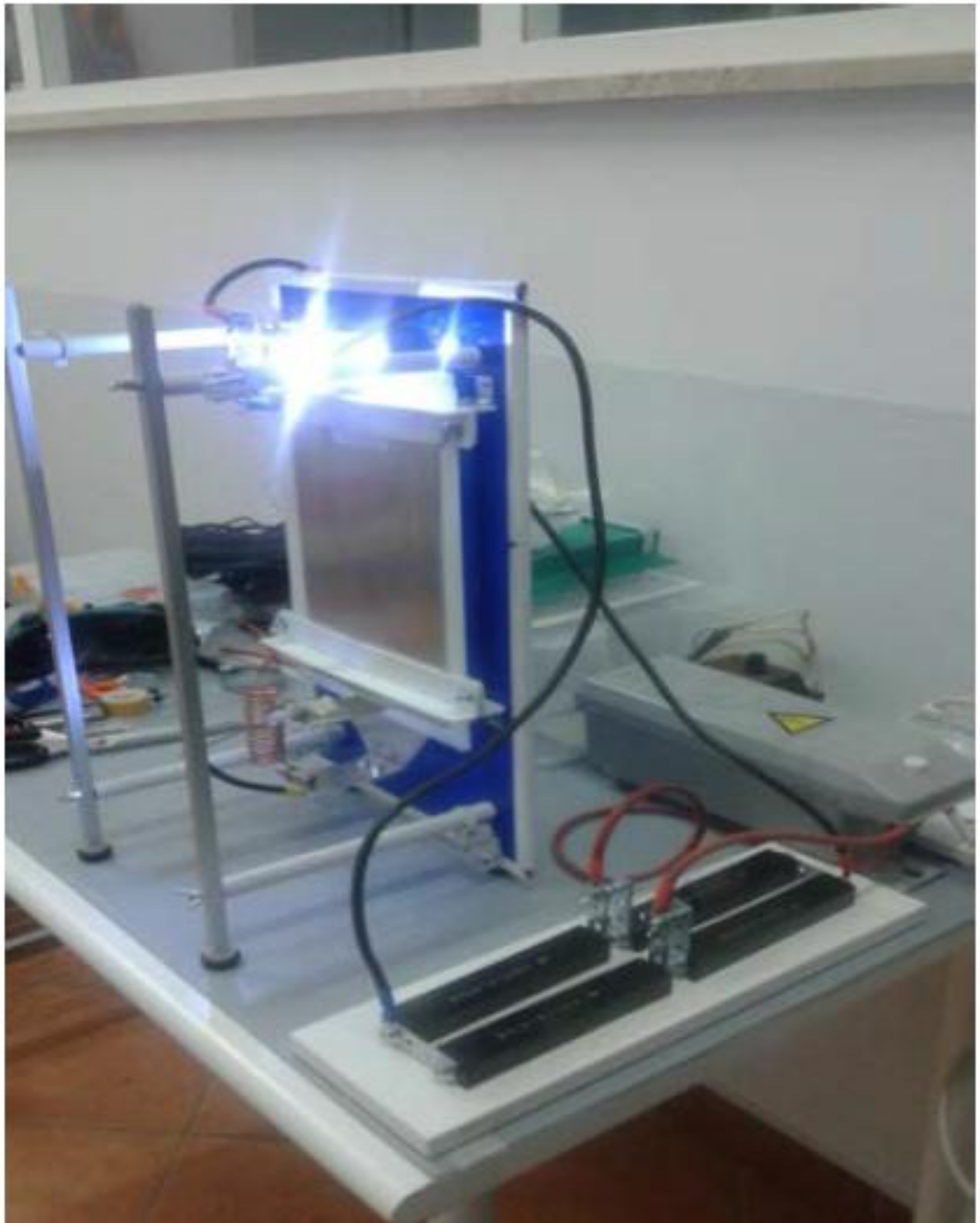


Fig.1

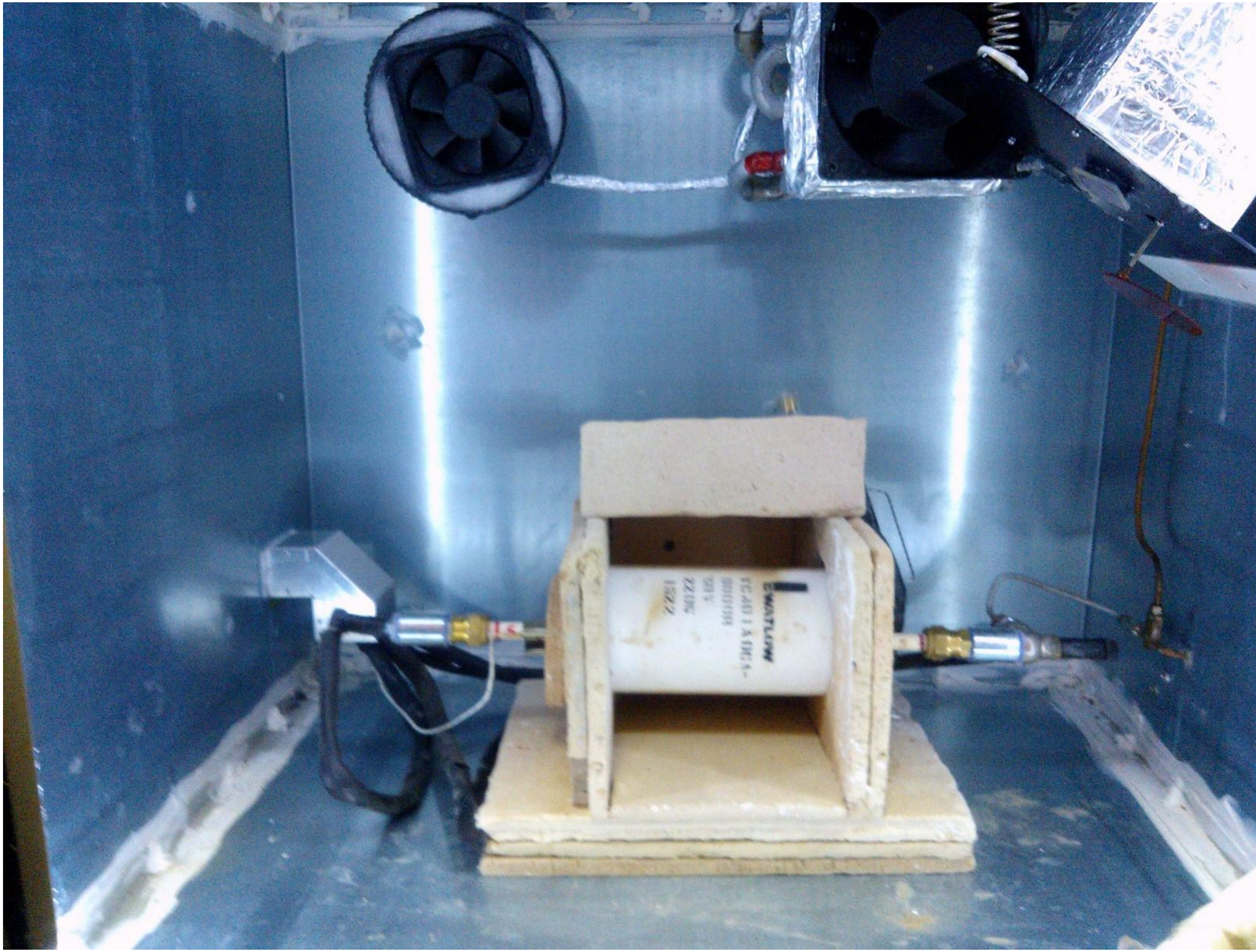
Schema n.1 (apparecchio sperimentale), estratto dalla citata domanda di brevetto



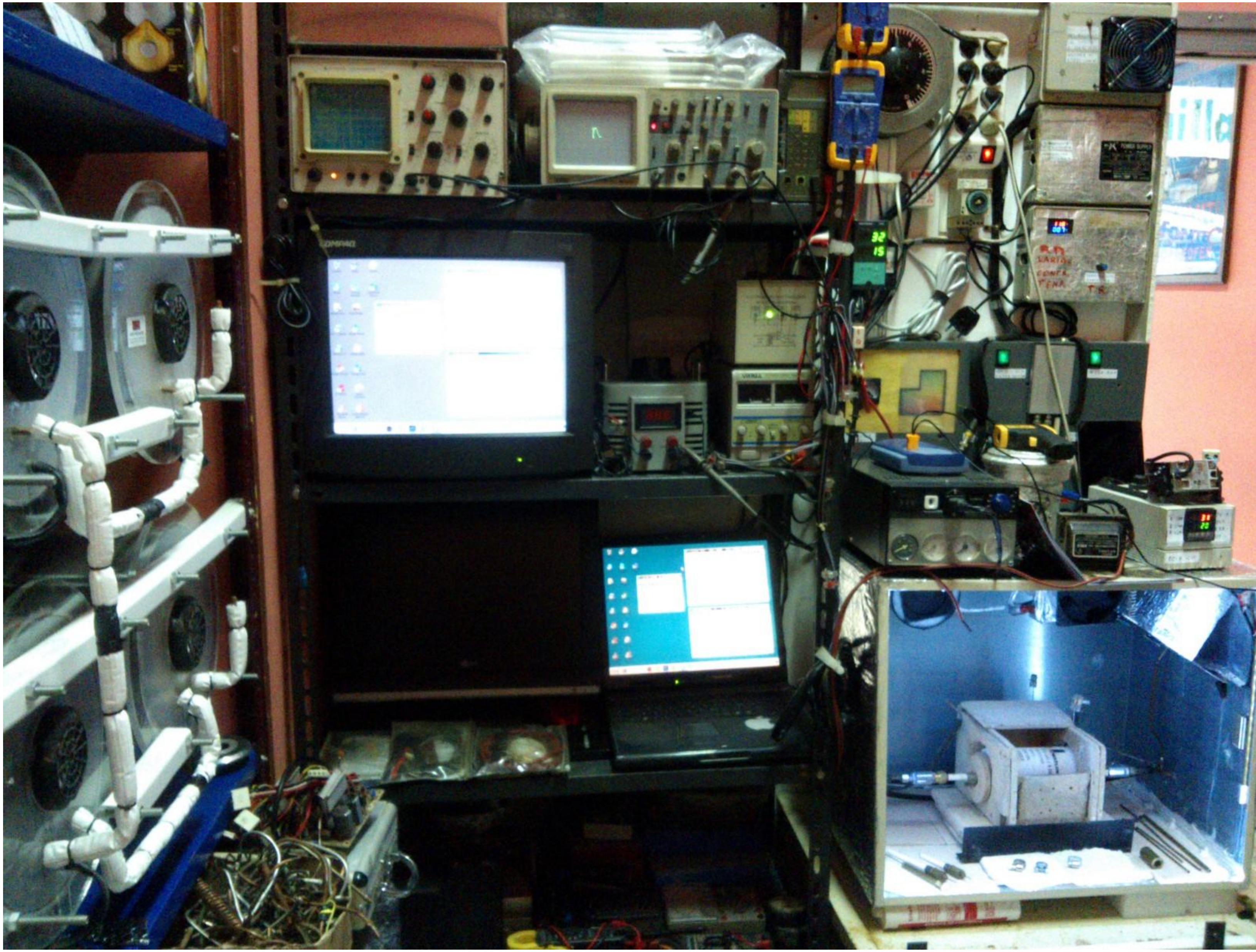
Pulse generator

Reactor-calorimeter

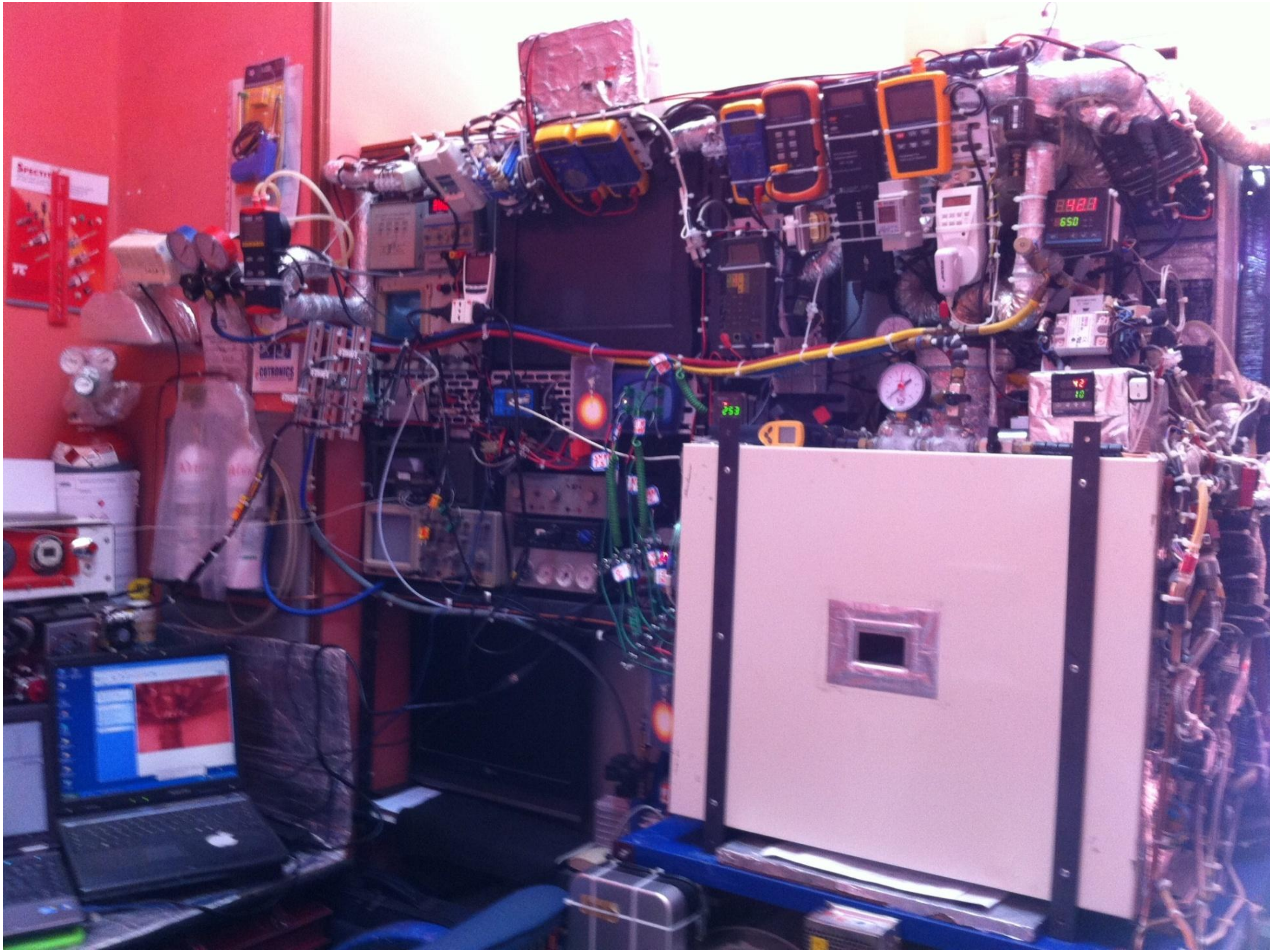
Americium – Beryllium gun



Ceramic hydrogen reactor

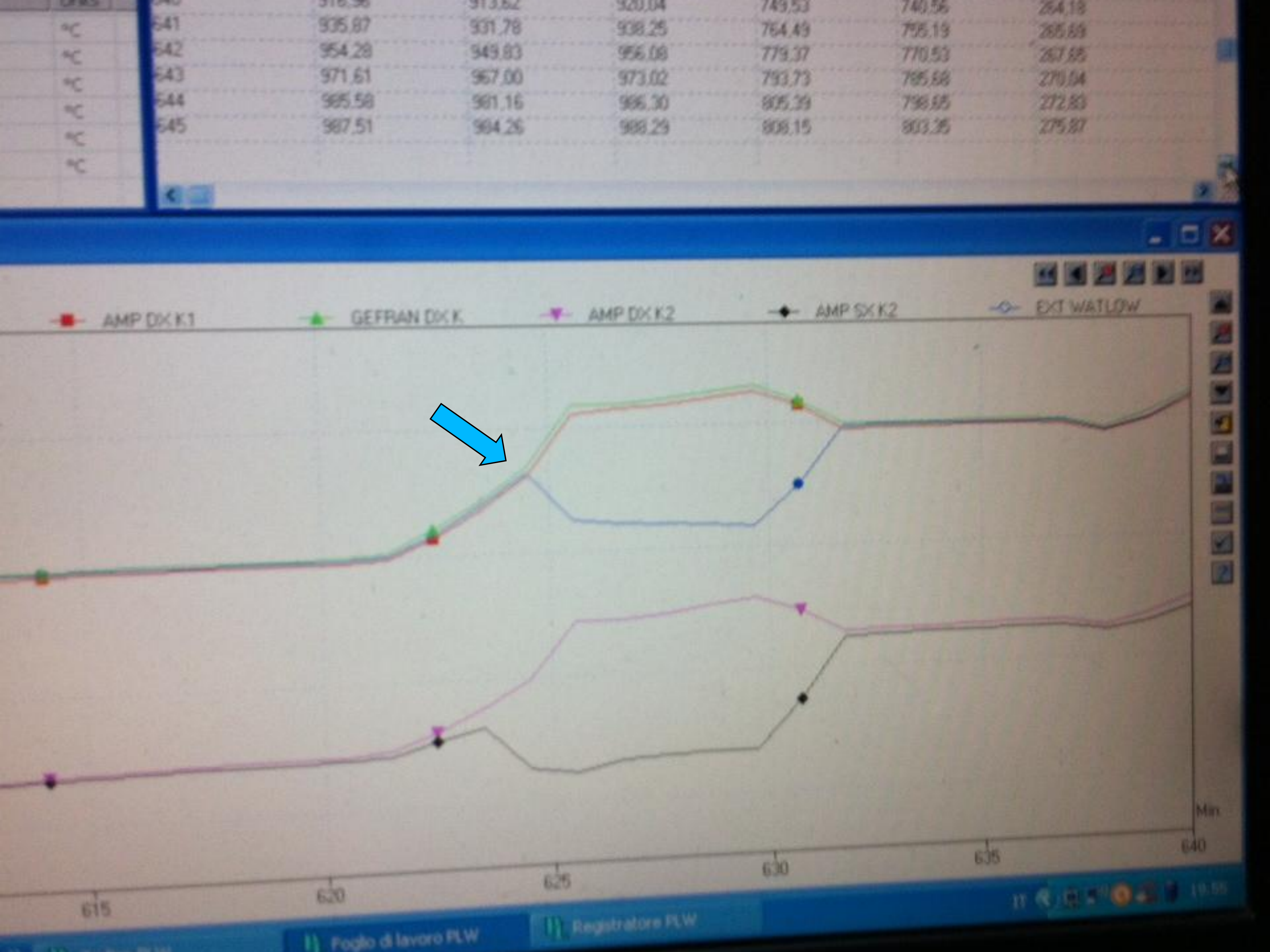


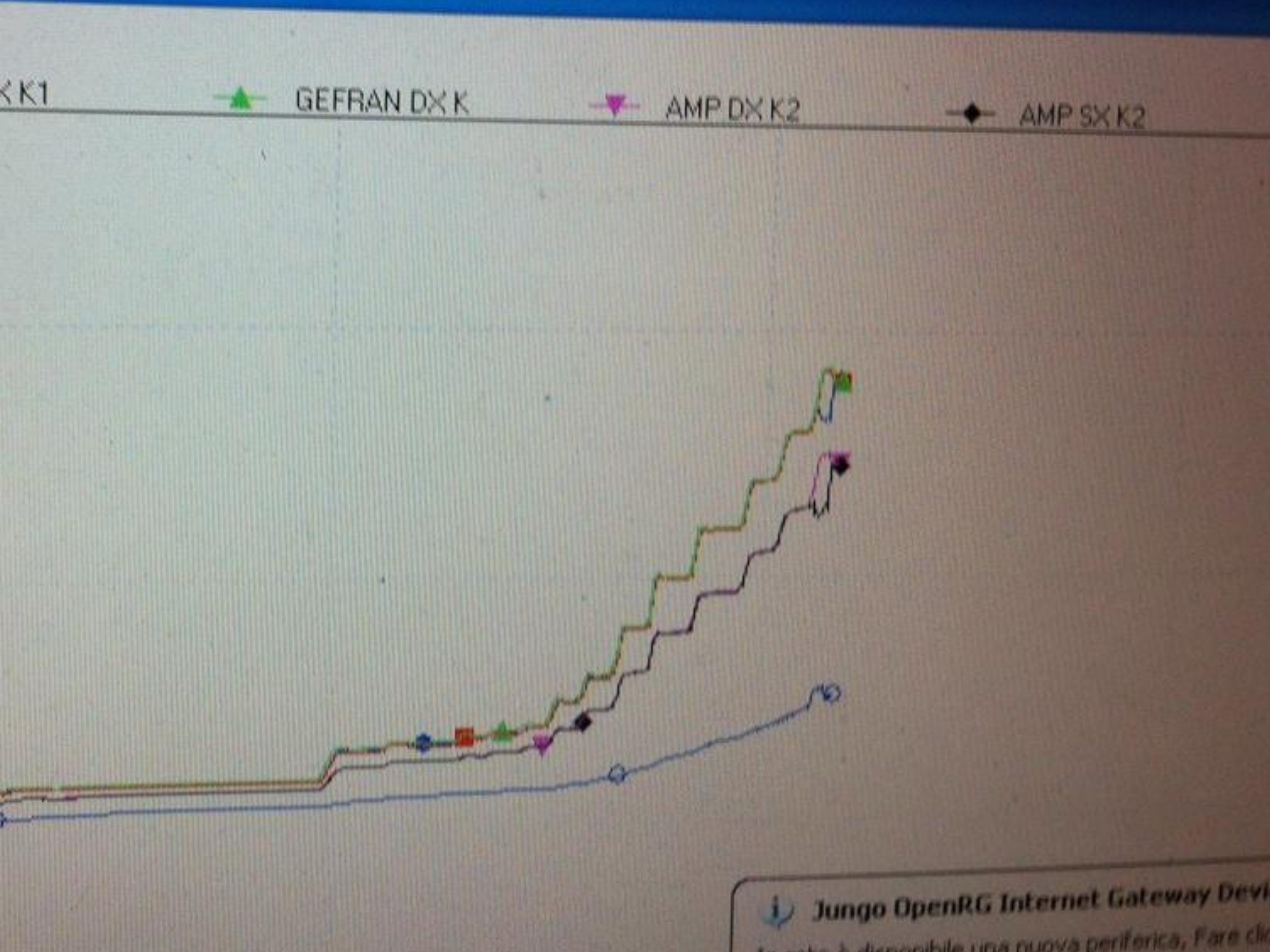
Control facility



Titano


First Direct Extraction of
Electric Power
from Hydrobetatron
Ugo Abundo Communications
an Open Power Association facility

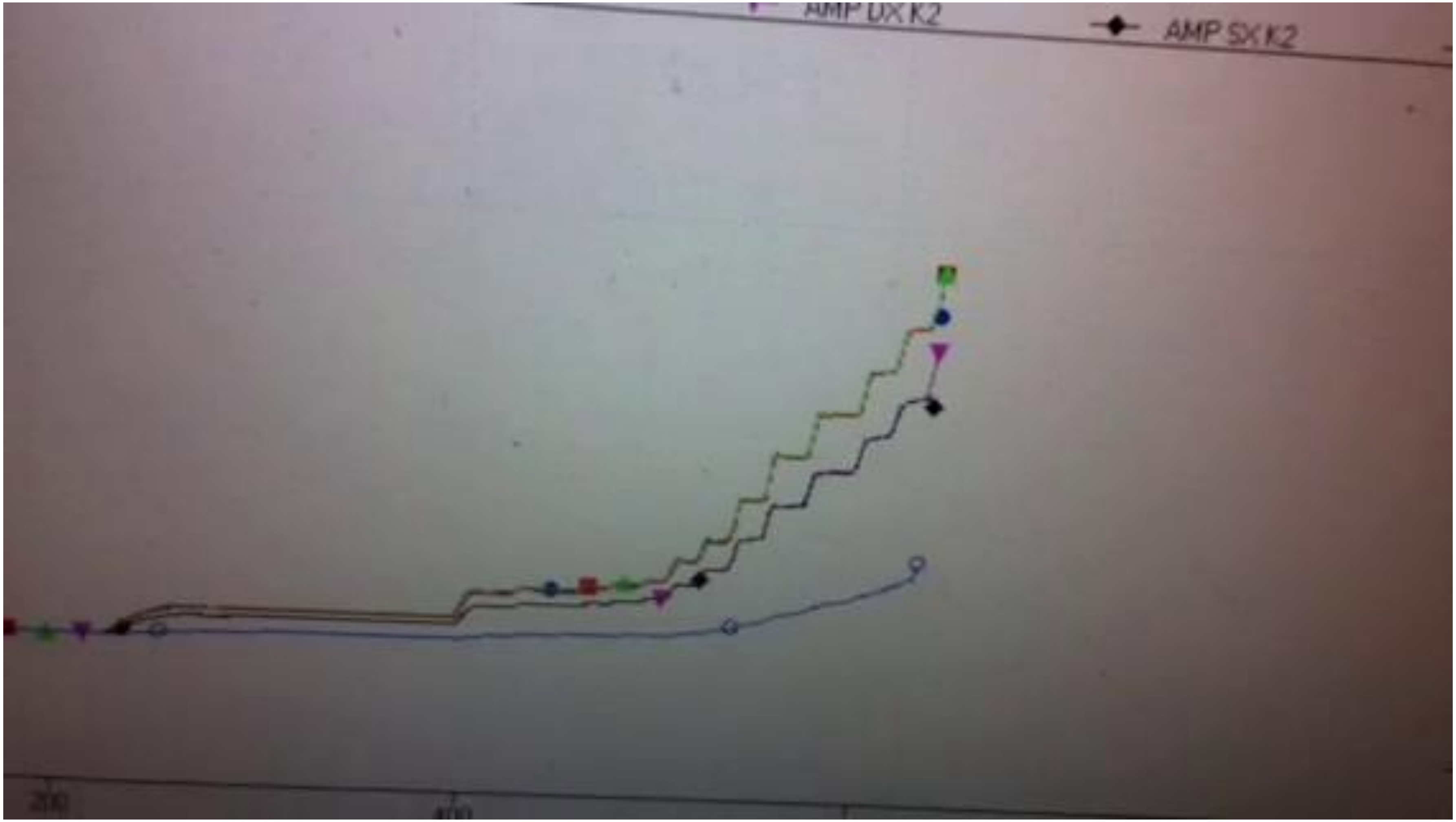

AMP DX K1
GEFRAN DX K
AMP DX K2
AMP SX K2
EXT WATLOW
Min
615
620
625
630
635
640
Foglio di lavoro PLW
Registratore PLW


GEFRAN DX K
AMP DX K2
AMP SX K2
Jungo OpenRG Internet Gateway

Ora Minuti	AMP SX K1 (°C)	AMP DX K1 (°C)	GEFRAN D (°C)
623	816,37	813,51	820,49
624	838,85	834,79	842,48
625	863,44	861,08	868,61
626	825,93	910,98	917,86
627	822,52	913,69	918,11
628	821,31	916,84	921,04
629	819,38	921,74	925,78
630	816,84	926,24	930,43
631	850,06	913,59	917,35
632	896,31	894,04	898,05

Discesa di pressione: 0.5 bar in un minuto

Filmato LIVE dell'anomalia



Some expected figures about the HEE Process

In the case of conventional radioisotope power generators, a long half-life means low emission rate and long service; on the other hand, a short half-life leads to high emission rate and short service.
In the HEE process, neutrons produced by the involved reactions strike on a suitable metal target capable of transmuting itself into an instable isotope that decays in a β-minus way with a very short half-life, leading to a very high electricity production rate.

The disappeared isotope nuclei are “freshly” and continuously replaced by new neutron-activated nuclei.

<u>In such a way, high rates and long service become compatible.</u>

In the following, some expected figures are shown.

Table 1- typical expected values in the reactor

Output Power (electric)	Output Power (thermal)	Neutron rate	β rate	α rate
1 KW	1-2 KW[(1)]	6×10^{15}/sec	6×10^{15}/sec[(2)]	6×10^{15}/sec[(2)]
10 KW	10-20 KW[(1)]	6×10^{16}/sec	6×10^{16}/sec	6×10^{16}/sec

(1).The optimal ratio between electric and thermal energy will be evaluated precisely during the R&D work. Moreover,it is also possible to get more electricity by converting the heat produced by the reactor with a solid state thermo-electric converter or with another kind of TE converter.

(2) The estimated rate of neutrons, β and α is about the same.

Table 2- typical expected fuel consumption in the reactor (1 KW)

Service duration	Lithium consumption	Deuterium consumption	Target consumption
1 Year	20 grams	0.6 grams	32.5 grams
10 Years	200 grams	6 grams	325 grams

By comparing the expected performances of HEE against a typical Pu^{238} power generator on a **10 years** duration, with the goal of 1 KW power:

Power (electric)	Pu dioxide weight (radioactive)	Total HEE reactants (not radioactive)	Weight ratio (HEE reactants /Pu dioxide)
1 KW	50 Kilograms	about 530 grams	1 %

The HEE Process

A Fusion Device with no plasma to be maintained at Millions degrees

Main characteristics

1. **Only well known nuclear reactions**

2. **No input energy**

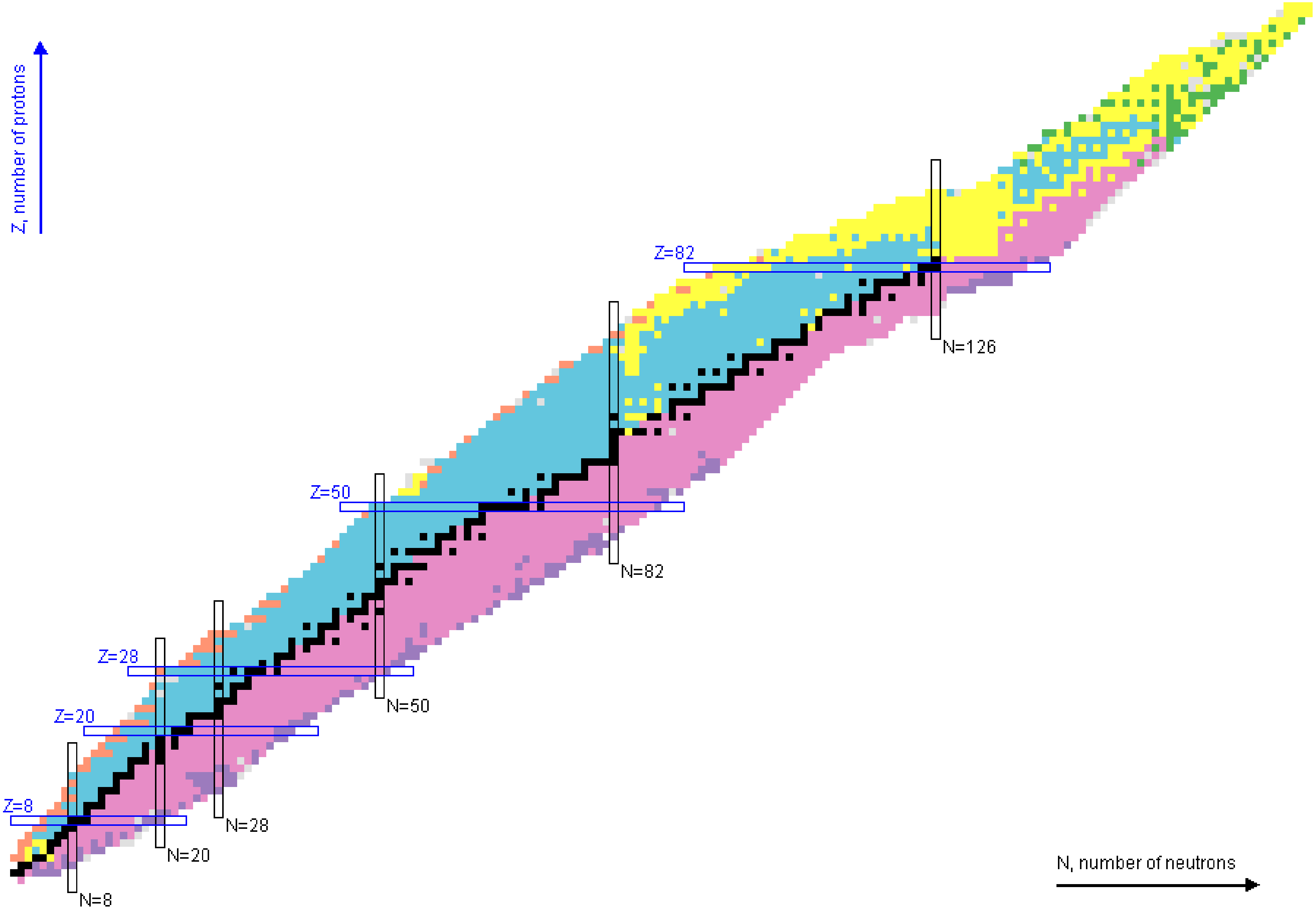
1. **No radioactive, long half-life products**

4. **High power density**

Fundamental Mechanisms

a. **Direct Electricity Generation**

a. **Neutron Multiplication**



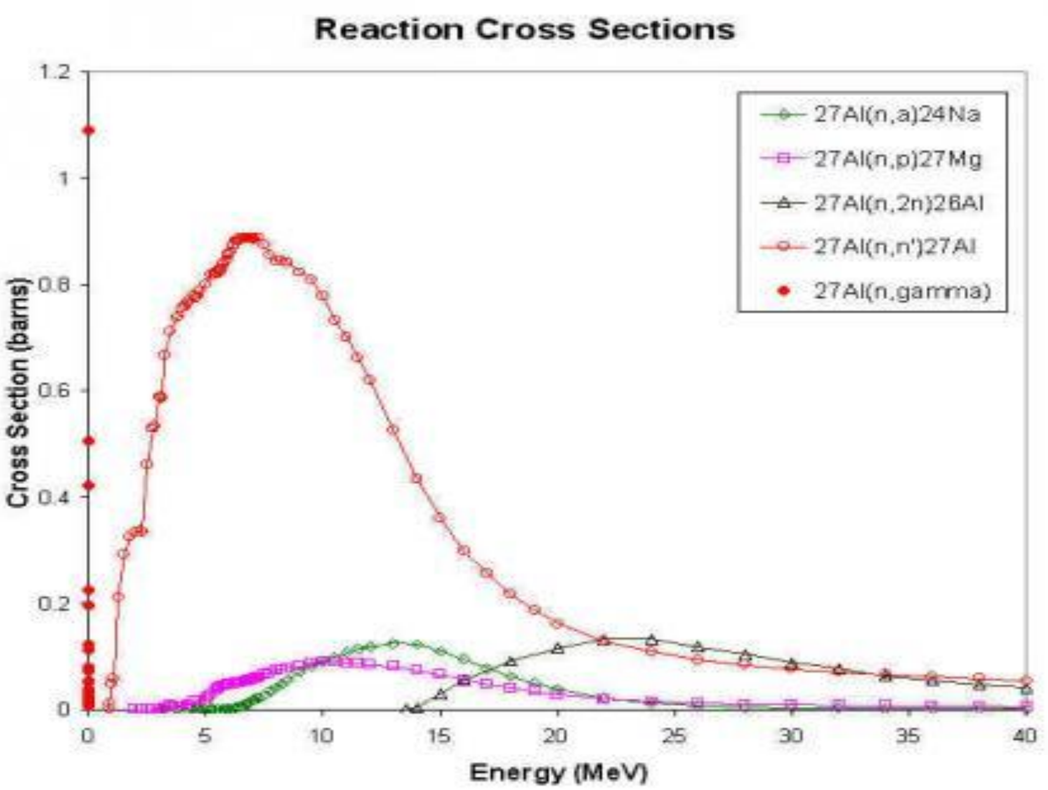
Nuclides chart

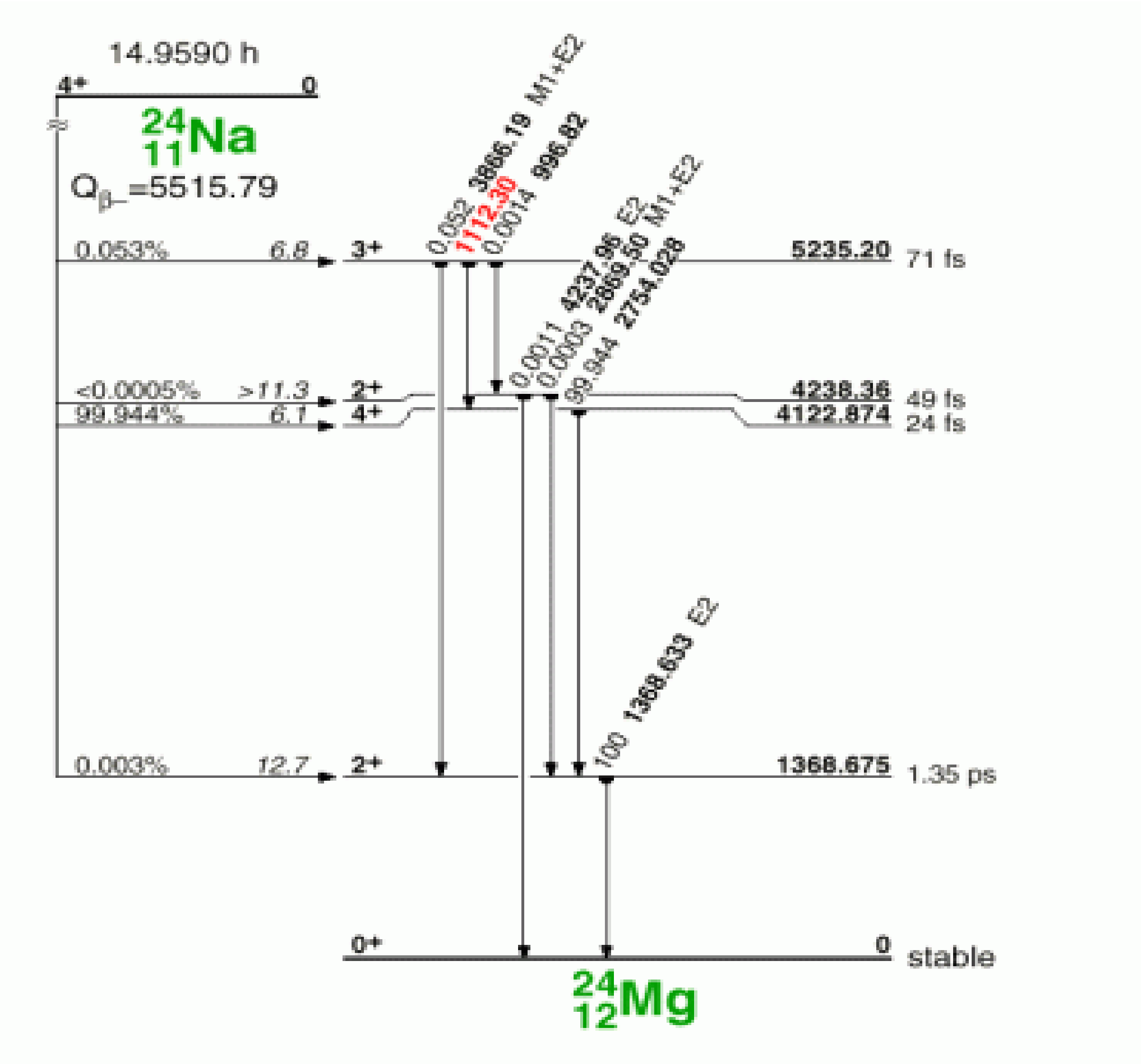
*Un fascio neutronico può essere spillato dalla sezione di produzione di neutroni, per colpire atomi contenuti in un adatto strato di metallo, per promuovere un decadimento β attivato da neutroni, che porta ad una estrazione regolabile di elettricità, mediante un sistema di conversione diretta da nucleare ad elettrico, **semplicemente proporzionale al numero di neutroni disponibili che si è scelto di estrarre.***

Come ^{7}Litio e Trizio, quando un atomo che porta troppi neutroni rispetto al suo numero di protoni viene colpito da neutroni, può avvenire una interazione debole, risultante in una cattura neutronica seguita da un decadimento di un neutrone in un protone, un elettrone e un antineutrino; l'atomo slitta a destra nella tavola periodica degli elementi.

Consideriamo, a SOLO titolo di esempio, l'alluminio.

(Da: http://www.geneseo.edu/nuclear/aluminum-activation-results) il ^{27}Al <u>ha</u> una sezione d'urto per la cattura di neutroni (14 MeV) di 0.1 barn (curva verde), che porta ad un ^{24}Na altamente radioattivo, con decadimento β^- e semivita di solo 15 ore, insieme ad ulteriori modi di decadimento.

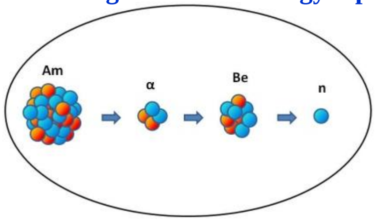




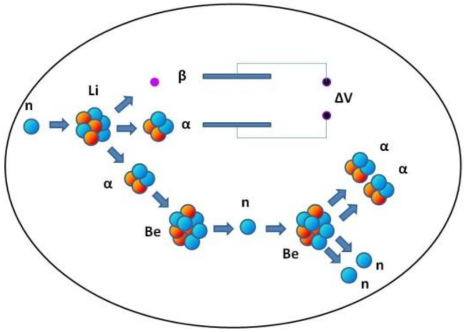
14.9590 h
4+
0
24 11 Na
Qβ- =5515.79
0.053%
6.8
3+
<0.0005%
>11.3
2+
99.944%
6.1
4+
0.003%
12.7
2+
0+
0.052 3866.19 M1+E2
1112.30
0.0014 996.82
0.0011 4237.96 E2
0.0003 2869.50 M1+E2
99.944 2754.028
100 1368.633 E2
5235.20
71 fs
4238.36
49 fs
4122.874
24 fs
1368.675
1.35 ps
0
stable
24 12 Mg

Functional block diagram of HEE

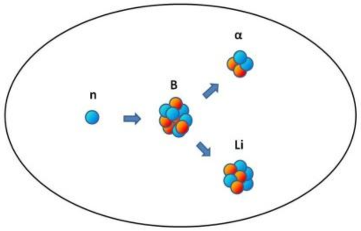
1 –Neutron gun without energy input



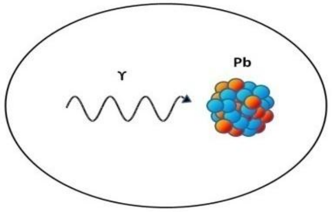
2 – Electricity and primary thermal energy

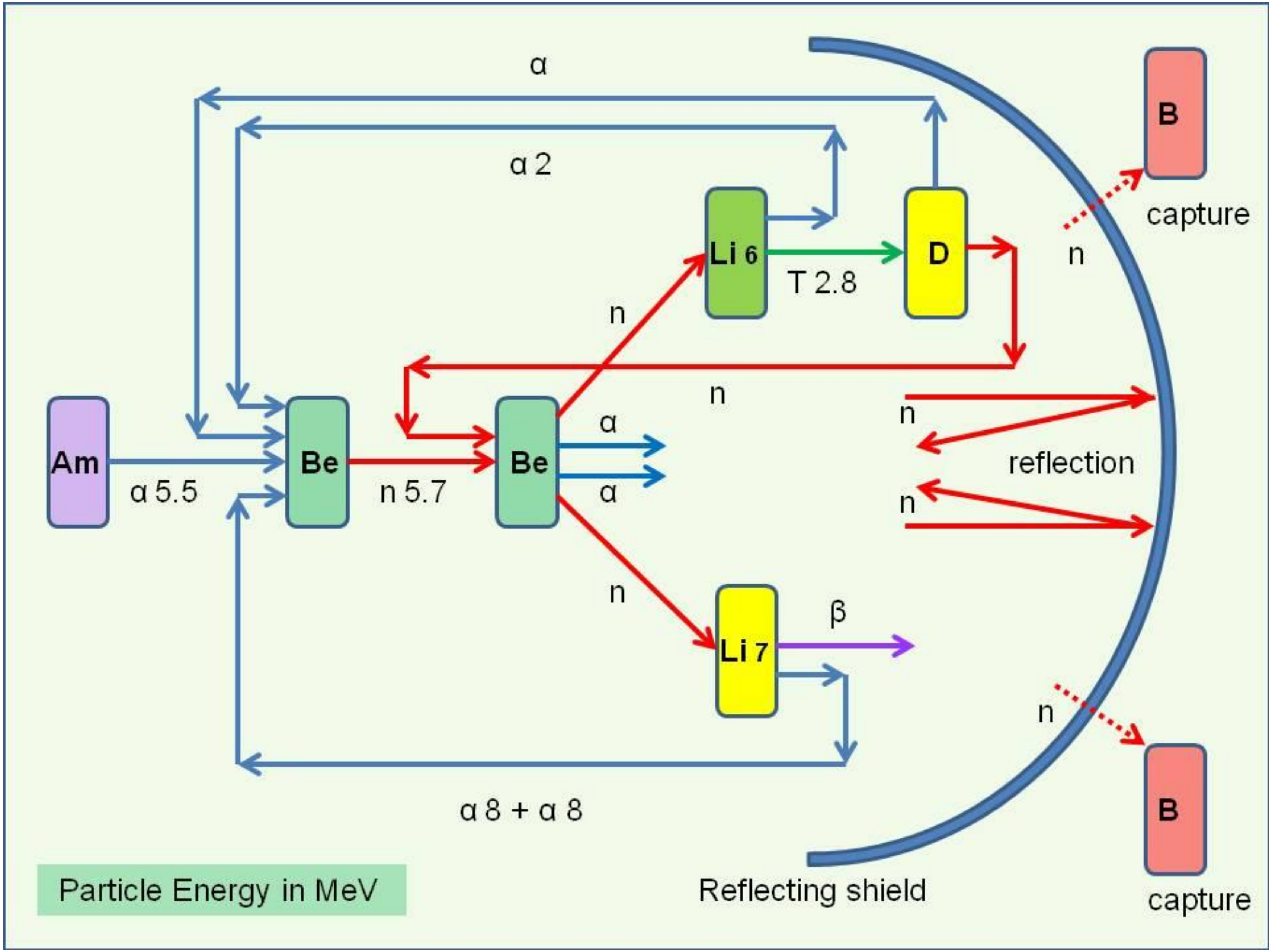


3 – Secondary thermal energy



4 – γ Capture



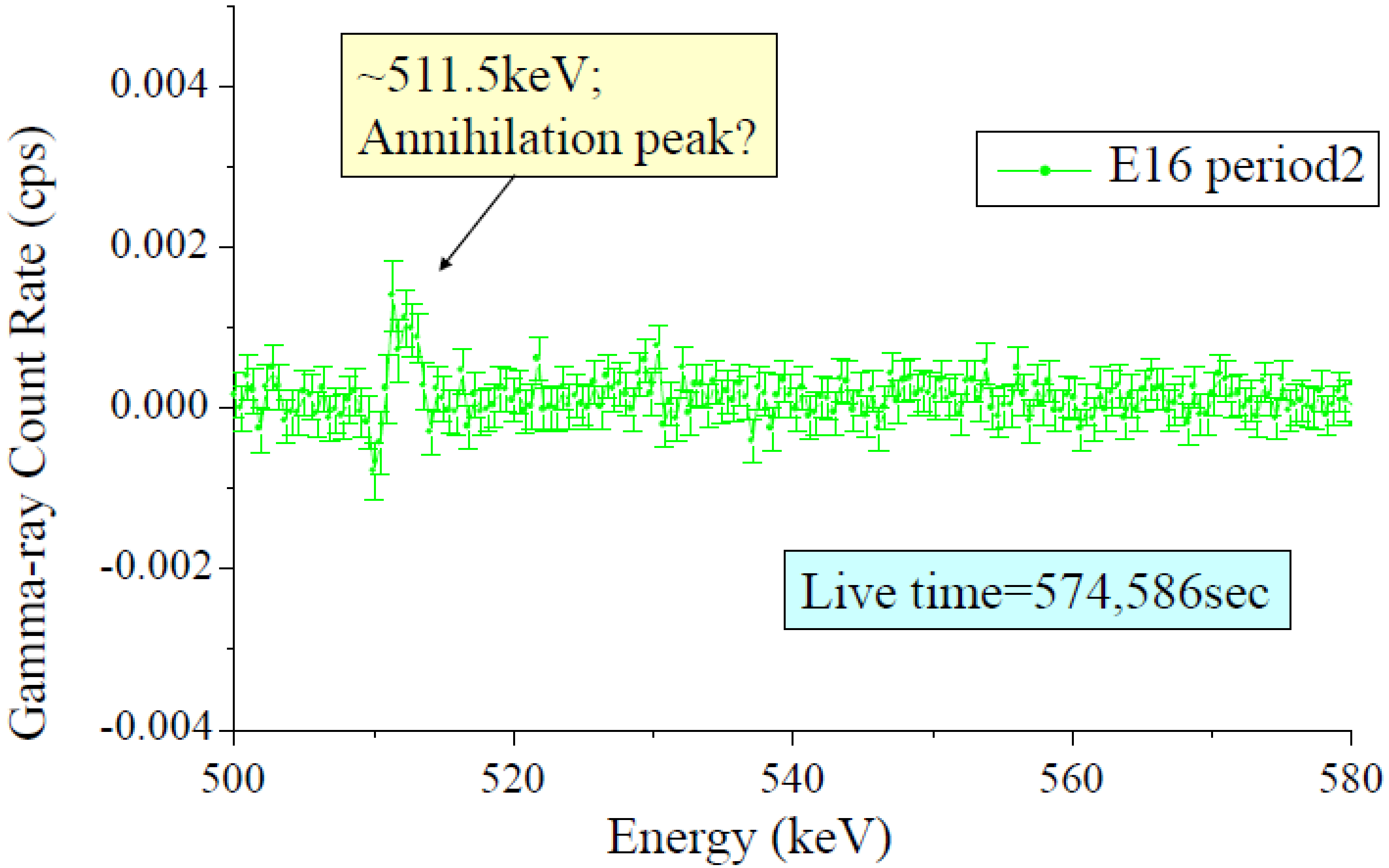


Neutron Multiplication mechanism

Iwamura - MIT 2014

Gamma-ray Measurement (period 2)

TECHNOLOGY & INNOVATION HEADQUARTERS

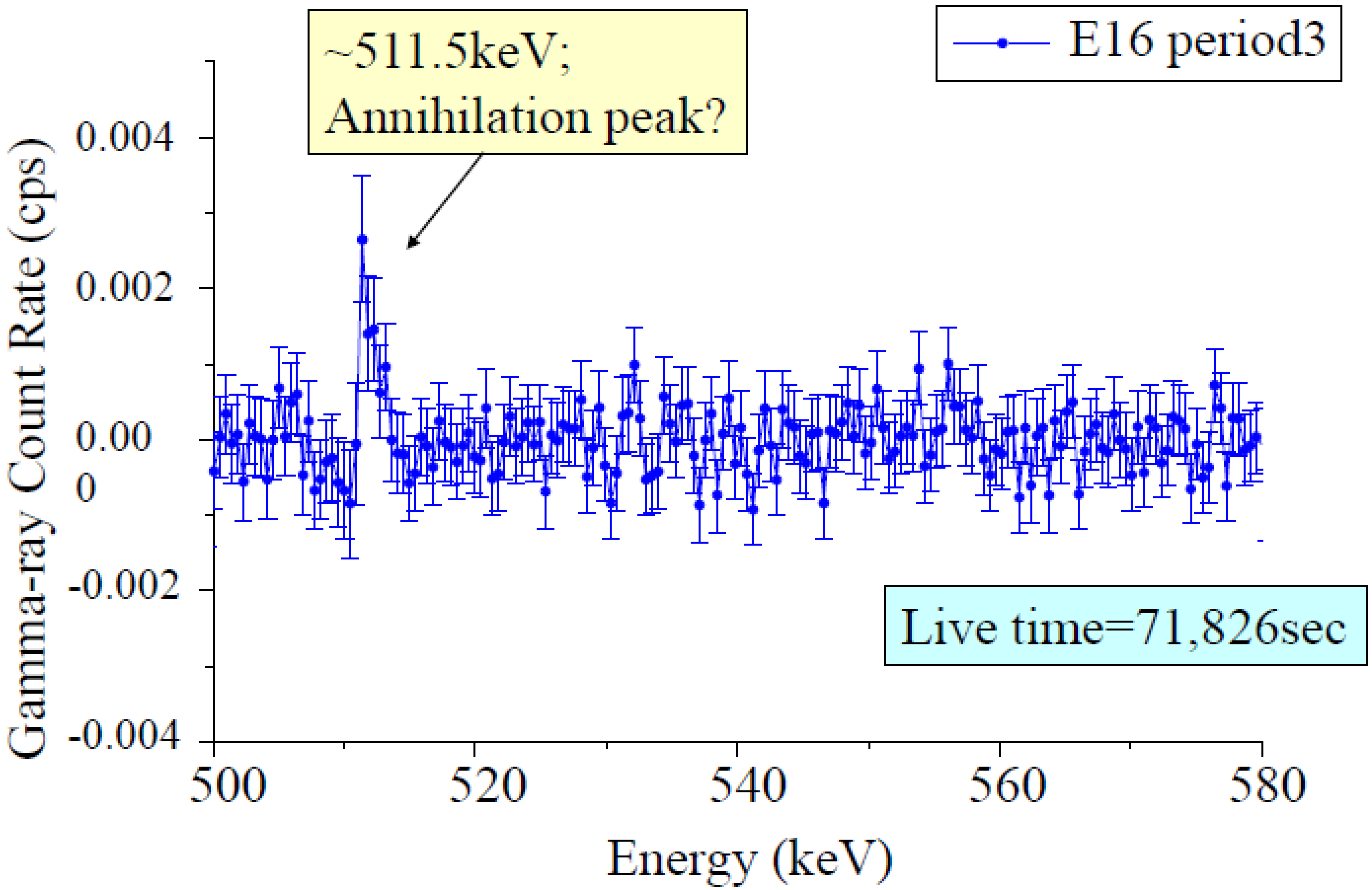


Iwamura – MIT 2014

Gamma-ray Measurement (period 3)

MITSUBISHI HEAVY INDUSTRIES, LTD.

TECHNOLOGY & INNOVATION HEADQUARTERS



Ipotesi meccanismi LENR

Weakly Interacting Massive Particles (Materia oscura) ?

Idrogeno ultradenso:

- distanze internucleari pari al raggio elettrone
- ruolo di mediazione elettrone schermante
- formazione ***"quasi neutroni",*** stati legati p-e (Mills, Santilli, Vassallo, Calaon, Abundo, ecc.)

Attivazione neutronica
Ni,Cu,Fe

↓

Emissione: ***positroni***, elettroni, gamma

Thank you