



European Research Council

Established by the European Commission

SANDA meeting – status of WP2

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DE ESPAÑA

MINISTERIO
DE CIENCIA, INNOVACIÓN
Y UNIVERSIDADES

Ciemat
Centro de Investigaciones
Energéticas, Medioambientales
y Tecnológicas

Participants in WP2

Work package number	WP2 23 institutions / 213 PMs			Lead beneficiary		CIEMAT	
Work package title	New nuclear data measurements for energy and non-energy applications						
Participant number	1	3	5	6	7	8	10
Short name of participant	<u>CIEMAT</u>	CEA	CNRS	CSIC	CVREZ	ENEA	IFIN-HH
Person-months per participant	14.3	7.1	21	14.4	11.7	15	11.2
Participant number	11	12	13	15	17	18	20
Short name of participant	IRSN	IST	JRC	JYU	NPI	NPL	NTUA
Person-months per participant	1.5	4	17.2	5	17.3	2.3	6
Participant number	22	23	27	29	30	31	33
Short name of participant	PTB	SCK	ULODZ	UMANCH	UOI	UPC	USC
Person-months per participant	4	2.2	12	10	6	1.8	10
Participant number	34	35					
Short name of participant	USE	UU					
Person-months per participant	10	9					
Start month	1			End month		60 (extended)	

WP2 tasks and subtasks

Task 2.1: Neutron induced fission and charged particle production cross sections

Task coordinator: **UMANCH**, partners: **CNRS/CENBG, CNRS/LPCC, CVREZ, NPI-CAS, NTUA, UOI, UU**

2.1.1: Neutron induced fission cross sections

2.1.2: Neutron induced charged particle production cross sections

Task 2.2: Neutron capture cross sections

Task coordinator: **ENEA**, partners: **CIEMAT, JRC, ULODZ, IRSN**

2.2.1. Capture measurements of fissile isotopes.

2.2.2. Capture measurement of stable isotopes.

Task 2.3: Neutron elastic and inelastic scattering and neutron multiplication cross sections

Task coordinator: **IFIN-HH**, partners: **CNRS/IPHC, JRC**

WP2 tasks and subtasks

Task 2.4: Decay data measurements

Task coordinator: **CSIC**, partners: **CEA/LNHB, CNRS/Subatech, CSIC, JRC, SCK, UPC**

2.4.1. Beta decay measurements with TAGs.

2.4.2. Beta delayed neutron measurements.

2.4.3. Measurement of half-live and gamma-ray emission probabilities of beta emitters.

Task 2.5: Fission yields measurements

Task coordinator: **UU**, partners: **CEA/IRFU, CNRS/LPSC, UJY, USC**

2.5.1. Fission yield studies in (n,f) reactions.

2.5.2. Fission yield studies in inverse kinematics.

Task 2.6: New measurements for non-energy applications

Task coordinator: **USE**, partners: **IST, NPL, PTB**

2.6.1. Spectrum averaged cross sections for dosimetry.

2.6.2. Measurement of cross sections relevant for hadron therapy.

2.6.3. Measurement of beta+ emitters.

Status of the deliverables (i)

Rel. Del. No	Del No	Title	Description	Lead Beneficiary	Nature	DL	Est. Del. Date (annex I)	Status
D2.1	D9	Report on the (n,f) cross section measurements	Report on the (n,f) cross section measurements	UMANCH	Report	Public	31 Aug 2023	Submitted
D2.2	D10	Report on the (n,chp) cross section measurements	Report on the (n,chp) cross section measurements	CNRS	Report	Public	29 Feb 2024	Received
D2.3	D11	Report on the $^{239}\text{Pu}(n,g)$, $^{92,94,95}\text{Mo}(n,g)$ cross measurements at n_TOF and GELINA	Report on the $^{239}\text{Pu}(n,g)$, $^{92,94,95}\text{Mo}(n,g)$ cross measurements at n_TOF and GELINA	ENEA	Report	Public	30 Apr 2024	Submitted
D2.4	D12	Report on the ^{239}Pu , ^{233}U , ^{14}N and $^{35,37}\text{Cl}$ inelastic cross section measurements at GELINA	Report on the ^{239}Pu , ^{233}U , ^{14}N and $^{35,37}\text{Cl}$ inelastic cross section measurements at GELINA	IFIN-HH	Report	Public	31 Jul 2024	Pending
D2.5	D13	Report on the measurements of the branching ratio for ^{209}Bi , $^{208}\text{Pb}(n,\text{tot})$ and $^{238}\text{U}(n,\text{inel})$ cross sections at GELINA.	Report on the measurements of the branching ratio for ^{209}Bi , $^{208}\text{Pb}(n,\text{tot})$ and $^{238}\text{U}(n,\text{inel})$ cross sections at GELINA.	JRC	Report	Public	30 Apr 2024	Submitted
D2.6	D14	Report of the decay data measurements performed with DTAS and BELEN	Report of the decay data measurements performed with DTAS and BELEN	CSIC	Report	Public	31 Aug 2023	Submitted
D2.7	D15	Report on the development of a new technique for obtaining low resolution information on the beta delayed neutron energies with BELEN-like detectors.	Report on the development of a new technique for obtaining low resolution information on the beta delayed neutron energies with BELEN-like detectors.	UPC	Report	Public	28 Feb 2022	Submitted
D2.8	D16	Report on the method based on the PI-ICR technique for general fission product yield studies at JYFL	Report on the method based on the PI-ICR technique for general fission product yield studies at JYFL	JYU	Report	Public	30 Nov 2023	Submitted

Status of the deliverables (ii)

Rel. Del. No	Del No	Title	Description	Lead Beneficiary	Nature	DL	Est. Del. Date (annex I)	Status
D2.9	D17	Spectrum averaged cross sections for dosimetry	Spectrum averaged cross sections for dosimetry	NPL	Report	Public	30 Apr 2024	Pending
D2.10	D18	Report on the measurement of double-differential charged-particle emission cross sections at the CERN n_TOF facility in the neutron energy range from 20 MeV to 200 MeV	Report on the measurement of double-differential charged-particle emission cross sections at the CERN n_TOF facility in the neutron energy range from 20 MeV to 200 MeV	PTB	Report	Public	30 Apr 2024	Submitted
D2.11	D19	Report on the production cross sections of beta+ emitters used for range verification in proton therapy.	Report on the production cross sections of beta+ emitters used for range verification in proton therapy.	USE	Report	Public	28 Feb 2022	Submitted
D2.12	D20	Report on the fission yield studies with the LOHENGRIN spectrometer at ILL	Report on the fission yield studies with the LOHENGRIN spectrometer at ILL	CNRS	Report	Public	31 Aug 2023	Submitted
D2.13	D21	Report on fission yield studies with FALSTAFF at NFS	Report on fission yield studies with FALSTAFF at NFS	CEA	Report	Public	31 Dec 2023	Submitted
D2.14	D22	Report on fission yield studies in inverse kinematics at FAIR	Report on fission yield studies in inverse kinematics at FAIR	USC	Report	Public	30 Jun 2022	Submitted
D2.15	D23	Report on the of half-live and gamma-ray emission probabilities of beta emitters measurement	Report on the of half-live and gamma-ray emission probabilities of beta emitters measurement	CEA	Report	Public	31 Aug 2023	Submitted

General status

80% (12/15) deliverables have been delivered and submitted.

D2.2 “Report on the (n,chp) cross section measurements” (CNRS). Draft received today and being revised.

D2.4 ”Report on the ^{239}Pu , ^{233}U , ^{14}N and $^{35,37}\text{Cl}$ inelastic cross section measurements at GELINA” (IFIN-HH) – submitted before the end of July. The inelastic and (n,2n) cross sections measurements on ^{239}Pu and $^{35,37}\text{Cl}$ could not be performed due to problems with the GELINA accelerator and will not be completed before the end of SANDA (see talk by A. Olacel). However, they will be carried out.

D2.9 “Spectrum averaged cross sections for dosimetry” (NPL). Is expected before the end of July (M. Bunce).

All MS have been achieved, except for MS23, which was completed partially (same reason as D2.4)

Reporting

SANDA will not be completed **until the final scientific and financial reports are submitted**. Please send the summary of your work (per subtask). It should be easy now that the technical work has been completed.

You can start now, and the deadline is **September 30th**.

Information that needs to be provided in your individual reports:

- Objectives of your work.
- Summary of the work done, and the results achieved.
- Impact of your work.
- Complete list of papers, conference proceedings, theses, master theses, documents produced related to your work.
- Status of the dissemination of your data. Submitted to EXFOR? Made publicly available? Where?
- Deviations from Annex 1 and Annex 2 (if applicable)

Summary and conclusions

- Despite the difficulties (pandemic, issues with facilities and with new instrumentation), WP2 was a great success.
 - Only small deviations from the original program.
 - All deliverables and MS will be available by the end of the project!
- The experimental program was completed to a very large extent!
- The work will finish when the reports are sent (for each individual activity)

Thank you for your outstanding and high-quality work!

Announcement: ND2025 in Madrid



An excellent conference for presenting your fantastic results!

www.nd2025madrid.com

Abstract submission is open



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SANDA meeting, 05/02/2024

Last, but not least

To many of you,

see you in **APRENDE**

Kick off meeting 16th – 18th of October 2024



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