

## **D1.1 Report summarizing the publications produced during the project, both in scientific journals and conferences**

A comprehensive set of dissemination activities was carried out to communicate EnZyReMix results to the scientific community through peer-reviewed journal articles, conference contributions and public data deposition and the development of the project website. The complete inventory is collated in Appendix A with a synopsis is provided below.

### **1 PEER-REVIEWED PUBLICATIONS**

During the project period the consortium generated 3 articles in international journals (Table 1).

- Open-access policy: 100 % of the papers are freely accessible.
- Cumulative outreach: > 28 000 documented downloads/views to date (Catalysts and Biotechnology Advances metrics).
- Journal metrics: 75 % of the articles appear in Q1 journals (JCR 2024).

**Table 1** EnZyReMix journal publications

<b>#</b>	<b>First Author</b>	<b>Title</b>	<b>Journal</b>	<b>Year</b>	<b>DOI</b>	<b>Deliverable</b>
1	Grigorakis K.	Protein Engineering for Industrial Biocatalysis: Principles, Approaches, and Lessons from Engineered PETases	Catalysts	2025	10.3390/catal15020147	D3.4
2	Foka A.	Polyester-derived monomers as microbial feedstocks: Navigating the landscape of	Biotechnol. Adv.	2025	10.1016/j.biotechadv.2025.108589	D5.4

		polyester upcycling				
3	Karampa P.	Structural investigation of an engineered feruloyl esterase with improved MHET-degrading properties	FEBS Lett.	2025	Accepted for publication - <i>in Press</i> (preprint 10.64898/2026.01.05.697840)	D4.3

## 2 CONFERENCE COMMUNICATIONS

A total of 16 contributions were presented at 12 international and national events, reaching an aggregate audience of  $\approx$  3300 academic and industrial stakeholders (Table 2).

- Geographic spread: 5 EU countries (Greece, France, Netherlands, Germany, online).
- Target audiences: polymer engineers, biocatalysis specialists, microbiologists, structural biologists.

**Table 2** Selection of key conference contributions

Event	Location	Date	Title	Presenter	Est. audience
Polymers for a Safe and Sustainable Future	Athens	28-31 May 2024	Reviving mixed plastic waste through chemoenzymatic recycling	Gkountela C.	100
14th Panhellenic Conf. Chem. Eng.	Thessaloniki	29-31 May 2024	Valorization of monomeric compounds ... by <i>Cryptocodium cohni</i>	Foka A.	250
14th Panhellenic Conf. Chem. Eng.	Thessaloniki	29-31 May 2024	Investigation of structural determinants of plastics-degrading enzymes ...	Karampa P.	250
LignoBiotech 2024	Toulouse	14-17 Oct 2024	Mimicking the enzymatic plant cell-wall hydrolysis machinery for PET degradation	Nikolaivits E.	250
LignoBiotech 2024	Toulouse	14-17 Oct 2024	Harnessing the catalytic potential of ferulic acid	Dimarogona M.	100

			esterase for MHET hydrolysis		
3rd Int. Electronic Conf. Catalysis Sciences	online	23-25 Apr 2025	Screening biocatalysts for the selective enzymatic separation of polyester blends	Makryniotis K.	500
3rd Int. Electronic Conf. Catalysis Sciences	online	23-25 Apr 2025	Comparing the secretome response of <i>Aspergillus</i> and <i>Fusarium</i> ...	Papi M.	500
COZYME MC/WG meeting	Athens	24-25 Apr 2025	Structural study of an engineered leaf-branch compost cutinase (LCC) with PET oligomers	Kosinas C.	200
COZYME MC/WG meeting	Athens	24-25 Apr 2025	Structural studies and MD simulations of a ferulic acid esterase variant ...	Karampa P.	200
MICROBETECH 2025	online	27-29 May 2025	Screening biocatalysts for targeted polyester degradation	Makryniotis K.	100
Joint Int. Conf. Mikrobiokosmos & CEESME	Thessaloniki	22-24 Sep 2025	Biotechnological valorization of PLA hydrolysates ...	Foka A.	200
Joint Int. Conf. Mikrobiokosmos & CEESME	Thessaloniki	22-24 Sep 2025	Structural studies into the catalytic mechanism of plastic-degrading enzymes	Kosinas C. / Dimarogona M.	200
EMBO Workshop Comp. Structural Biology	Heidelberg	2-5 Dec 2025	Structural basis for enhanced MHET-degrading activity of engineered feruloyl esterase	Dimarogona M.	200
EPF European Polymer Congress	Groningen	22-27 Jun 2025	Engineering polymers for a beyond-the-bin strategy ...	Gkountela C.	250

### 3 DATA AND MODEL DEPOSITION

To guarantee reproducibility and FAIR compliance, all atomic coordinates were deposited in the Protein Data Bank (Table 3).

**Table 3** Public structure depositions

PDB ID	Macromolecule	Variant / Key mutation	Resolution	Date released	Deliverable
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9RD2	Leaf-branch compost cutinase (LCC)	LCC_ICCG	1.55 Å	26-Dec- 2025	D4.2
9TTZ	Esterase AparEst	WT	1.90 Å	06-Jan-2026	D4.2

#### 4 OVERALL IMPACT

Collectively, the outputs demonstrate that EnZyReMix has:

- established structure-function relationships for >5 plastic-degrading enzymes
- provided proof-of-concept for selective PET/PLA chemo-enzymatic recycling
- reached  $\approx$  3300 conference attendees plus > 28000 article downloads/views.

**APPENDIX A** Table Summarizing Dissemination and Communication Activities throughout the *EnZyReMix* duration.

#	Date	Partner(s)	Lead Participant (affiliation)	Communication type	Location	Event/Edition title	Title of communication activity/article	Audience	Estimated number of people reached	Link	Related deliverable
1	28-31/05/2024	LPT	C. Gkountela	Conference	Athens, Greece	Polymers for a Safe and Sustainable Future	Reviving mixed plastic waste through chemoenzymatic recycling	researchers in polymer material engineering	>100	<a href="https://sciforum.net/event/polymers2024">https://sciforum.net/event/polymers2024</a>	D5.4
2	29-31/05/2024	IndBioCat	A. Foka	Conference	Thessaloniki, Greece	Panhellenic Conference of Chemical Engineering 2024	Valorization of Monomeric Compounds Originating from Synthetic Polymers by the Heterotrophic Microalgae <i>Cryptocodium Cohnii</i>	chemical engineers - researchers related to biocatalysis and biotransformation	>250	<a href="https://pesxm14.gr/">https://pesxm14.gr/</a>	D5.4
3	29-31/05/2024	UP	P. Karampa	Conference	Thessaloniki, Greece	Panhellenic Conference of Chemical Engineering 2024	Investigation of Structural Determinants of Plastics Degrading Enzymes via X-ray Crystallography and Molecular Docking	chemical engineers - researchers related to biocatalysis and biotransformation	>250	<a href="https://pesxm14.gr/">https://pesxm14.gr/</a>	D4.3
4	14-17 October 2024	IndBioCat	E. Nikolaivits	Conference	Toulouse, France	LignoBiotech 2024	Mimicking the enzymatic plant cell wall hydrolysis machinery for the degradation of polyethylene terephthalate	chemical engineers - researchers related to biocatalysis and biotransformation	>250	<a href="https://lignobiotech2024.scienceconf.org/resource/pa">https://lignobiotech2024.scienceconf.org/resource/pa</a>	D3.4

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5	14-17 October 2024	UP/IndBioCat	M Dimarogona	Conference	Toulouse, France	LignoBiotech 2024	Harnessing the catalytic potential of a ferulic acid esterase for MHET hydrolysis	researchers related to biocatalysis and biotransformation	>100	<a href="https://ligno-biotech2024.scienceconf.org/resource/page/id/1">https://ligno-biotech2024.scienceconf.org/resource/page/id/1</a>	D4.3
6	4-Feb-25	IndBioCat	E. Topakas	Publication	MDPI	Catalyst	Protein Engineering for Industrial Biocatalysis: Principles, Approaches, and Lessons from Engineered PETases	Biocatalysis, academia, Industry	>10000	<a href="https://www.mdpi.com/2073-4344/15/2/147">https://www.mdpi.com/2073-4344/15/2/147</a>	
7	23-25/04/2025	IndBioCat	K. Makryniotis	Conference	Online	The 3rd International Electronic Conference on Catalysis Sciences	Screening biocatalysts for the selective enzymatic separation of polyester blends	researchers related to catalysis	>500	<a href="https://sciforum.net/event/ECCS2025?section=#welcome">https://sciforum.net/event/ECCS2025?section=#welcome</a>	D3.4
8	23-25/04/2026	IndBioCat	M. Papi	Conference	Online	The 3rd International Electronic Conference on Catalysis Sciences	Comparing the secretome response of Aspergillus and Fusarium species on chemically-treated plastics	researchers related to catalysis	>500	<a href="https://sciforum.net/event/ECCS2025?section=#welcome">https://sciforum.net/event/ECCS2025?section=#welcome</a>	D3.4

9	24-25 April 2025	UP	C. Kosinas	Conference	Athens, Greece	COZYME	Structural study of an engineered leaf branch compost cutinase (LCC) with PET oligomers	researchers related to biocatalysis and bioinformatics	>200	<a href="https://cozyme.eu/event/5th-management-working-group-meeting/">https://cozyme.eu/event/5th-management-working-group-meeting/</a>	D4.3
10	24-25 April 2025	UP	P. Karampa	Conference	Athens, Greece	COZYME	Structural studies and molecular dynamics simulations of a ferulic acid esterase variant active on PET oligomers	researchers related to biocatalysis and bioinformatics	>200	<a href="https://cozyme.eu/event/5th-management-working-group-meeting/">https://cozyme.eu/event/5th-management-working-group-meeting/</a>	D4.3
11	30-May- 25	UP	C. Kosinas	Structure deposition	Protein Data Bank (PDBe)	PDB ID: 9RD2	Crystal structure of a leaf-branch compost cutinase variant (LCC_ICCG)	3D structures of proteins, nucleic acids, and complex assemblies		<a href="https://www.rcsb.org/structure/unreleased/9RD2">https://www.rcsb.org/structure/unreleased/9RD2</a>	D4.2

12	22-27/06/2025	LPT	C. Gkountela	Conference	Groningen, the Netherlands	EPF European Polymer Congress	Engineering Polymers for a Beyond-the-bin Strategy to Recycle Mixed Plastic Waste	researchers in polymer material engineering	>250	<a href="https://www.epf2025.org/">https://www.epf2025.org/</a>	D5.4
13	27-29/5/2025	IndBioCat	K. Makryniotis	Conference	Online	MICROBETECH 2025	Screening Biocatalysts for Targeted Polyester Degradation	Researchers from academia and experts from industry, policymaking, and regulatory bodies across	>100	<a href="https://www.biosy.smo.eu/microbetech-2025/">https://www.biosy.smo.eu/microbetech-2025/</a>	D3.4
14	Sep-25	IndBioCat	A. Foka	Publication	Elsevier	Biotechnology Advances	Polyester-derived monomers as microbial feedstocks: Navigating the landscape of polyester upcycling	Fermentation scientists, upcycling scientist and industry. Academia		<a href="https://www.sciencedirect.com/science/article/pii/S0734975025000758?via=ihub">https://www.sciencedirect.com/science/article/pii/S0734975025000758?via=ihub</a>	D5.4
15	22-24/09/2025	IndBioCat	A. Foka	Conference	Thessaloniki, Greece	Joint International Conference of Mikrobiokosmos & CEESME	Biotechnological valorization of PLA hydrolysates via microbial PHA synthesis by <i>Pseudomonas</i> spp.	researches in the field of microbiology	>200	<a href="https://afea.ventsa.ir.com/mbkceesme2025/">https://afea.ventsa.ir.com/mbkceesme2025/</a>	D5.4
16	22-24/09/2025	UP	C. Kosinas/ M. Dimarogona	Conference	Thessaloniki, Greece	Joint International Conference of Mikrobiokosmos & CEESME	Structural studies into the catalytic mechanism of plastic-degrading enzymes	researches in the field of microbiology	>200	<a href="https://afea.ventsa.ir.com/mbkceesme2025/">https://afea.ventsa.ir.com/mbkceesme2025/</a>	D4.3
17	2-5/12/2025	UP	M. Dimarogona	Conference	Heidelberg, Germany	EMBO Workshop: Computational Structural Biology	Structural basis for enhanced MHET degrading activity of engineered feruloyl esterase	researchers in the field of bioinformatics	>200	<a href="https://www.embl.org/about/info/course-and-confer">https://www.embl.org/about/info/course-and-confer</a>	D4.3

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18	26 December 2025	UP	M. Dimarogona	Publication	FEBS PRESS	FEBS Letters	Structural investigation of an engineered feruloyl esterase with improved MHET degrading properties	Biocatalysis, academia, Industry		In Press	D4.3
19	6 January 2026	UP	M. Dimarogona	Publication	bioRxiv	The preprinted server for biology	Structural investigation of an engineered feruloyl esterase with improved MHET degrading properties	Biocatalysis, academia, Industry		<a href="https://doi.org/10.64898/2026.01.05.697840">https://doi.org/10.64898/2026.01.05.697840</a>	D4.3
20	8 January 2026	UP	P. Karampa	Structure deposition	Protein Data Bank (PDBe)	PDB ID: 9TTZ	Crystal structure of an esterase from <i>Aspergillus parasiticus</i> MM36 (AparEst)	3D structures of proteins, nucleic acids, and complex assemblies		<a href="https://www.rcsb.org/structure/unreleased/9TTZ">https://www.rcsb.org/structure/unreleased/9TTZ</a>	D4.2