

# CEB – Centre of Biological Engineering

*Linking Life and Technology  
to shape the future*



# Our Research Centre



University of Minho  
School of Engineering

## University of Minho



## Centre of Biological Engineering



## Research lines



Environmental Biotechnology



Food Biotechnology



Industrial Biotechnology



Health Biotechnology

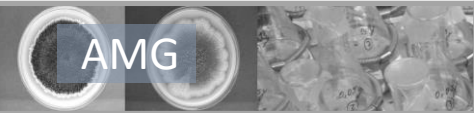

















<https://www.ceb.uminho.pt/Research>



# Research Groups



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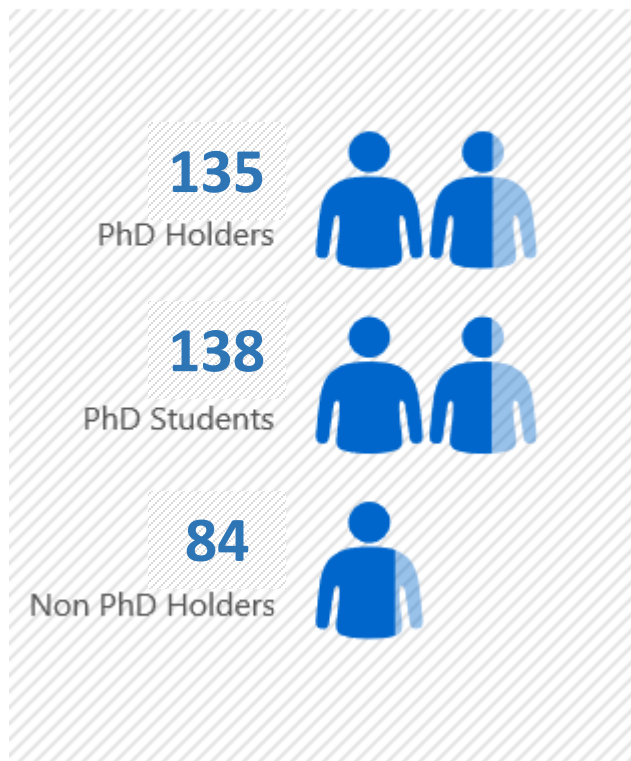
			Biotechnology & Bioengineering			
			Industrial	Environment	Food	Health
		Applied Mycology	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Bioprocess and Bionanotechnology	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
		Molecular Biotechnology, Bioreactors, and Biofuels	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
		Biofilm Science and Technology			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Sensor Research (ISEP/IPP)		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
		Bioprocess Engineering and Computational Biosystems	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Bioresources, Bioremediation, and Biorefinery	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
		Food Innovation & Technology	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
		FUNctional CARBohydrates and Nanobiotechnology	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



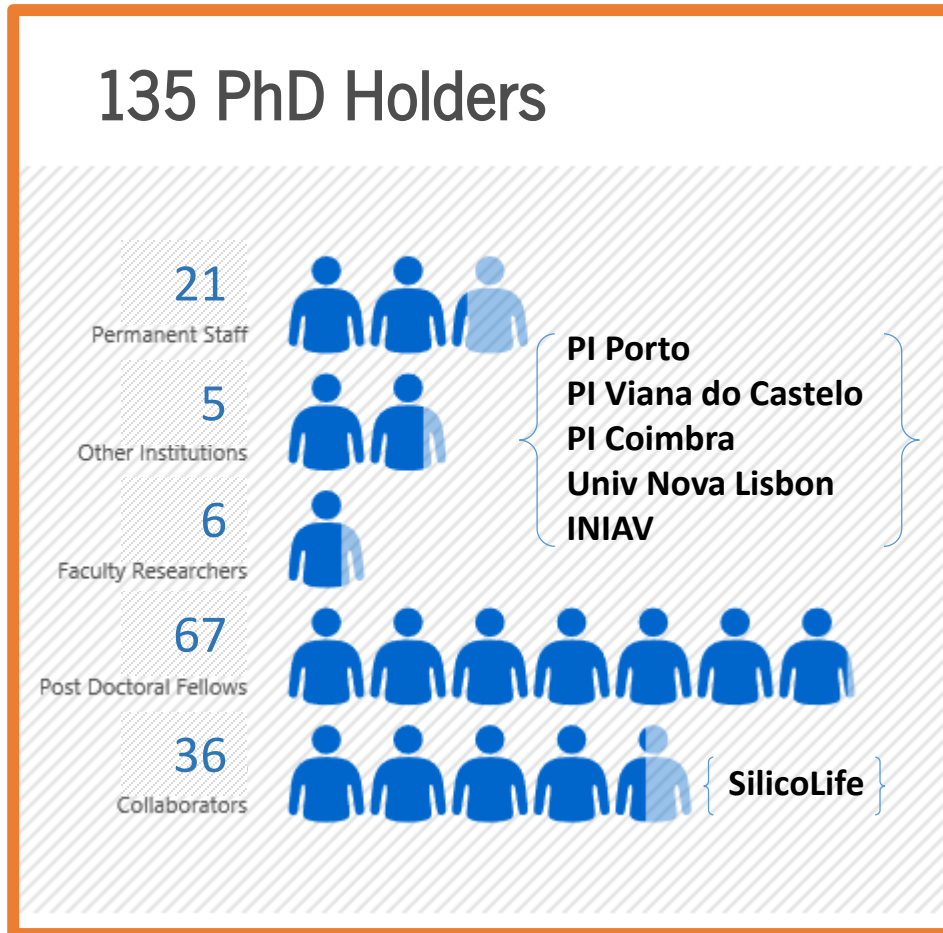
# Team



## 357 Researchers



## 135 PhD Holders



**26** *Technical/Admin Staff*





# Our Infrastructures

*5 sites on campus*

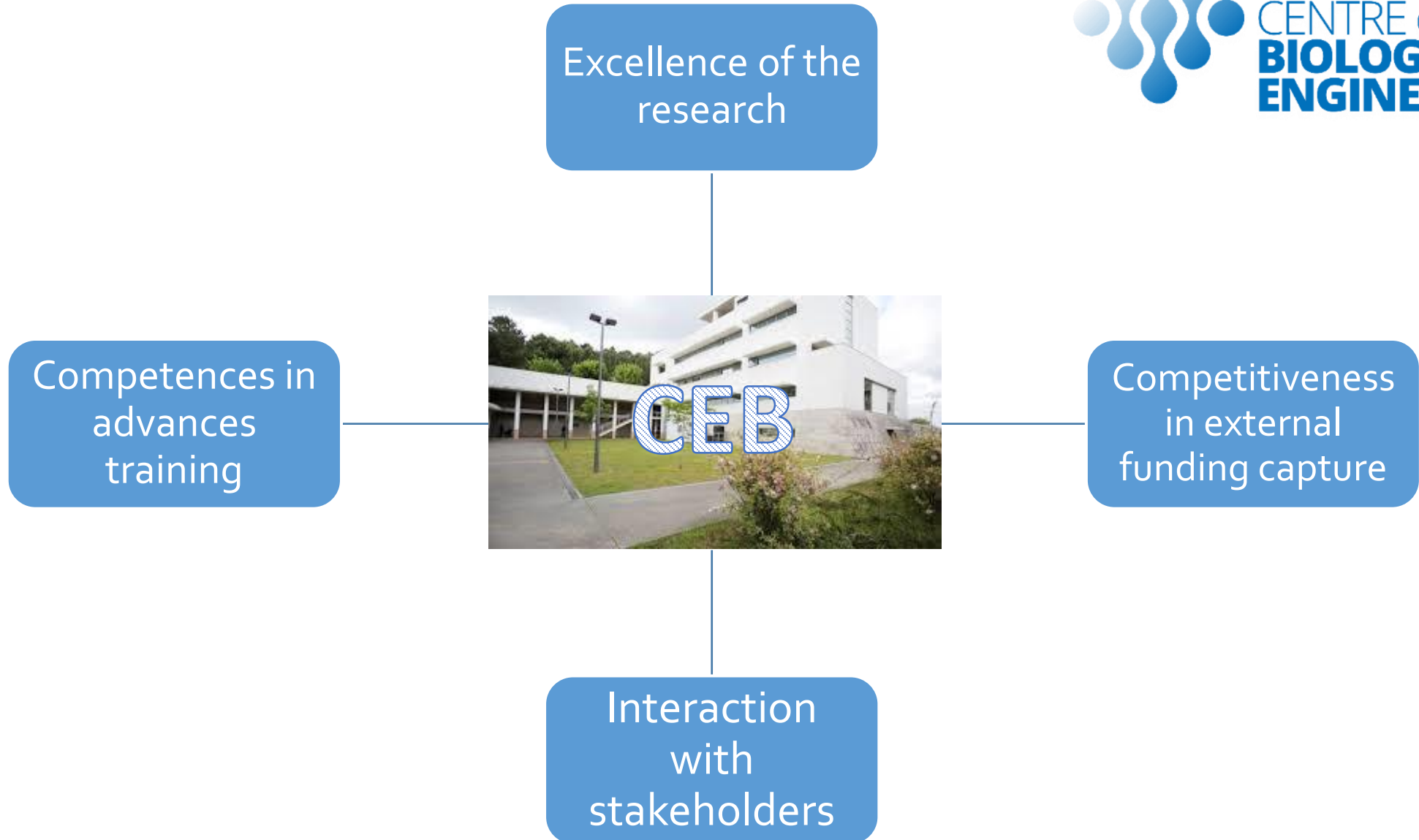


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# Main Outcomes

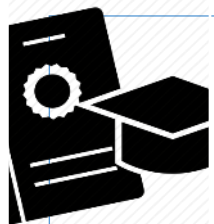


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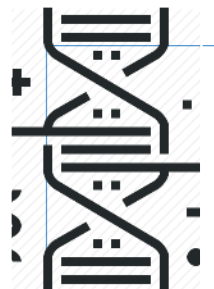
**1500+** papers published

25% in "D1 journals"  
70% in "Q1 journals"  
(90% Q1+Q2)



**77 PhD theses**

under the supervision of CEB members  
were concluded



**25 M€**

Average income volume of awarded budget  
derived from research projects from external  
funding bodies



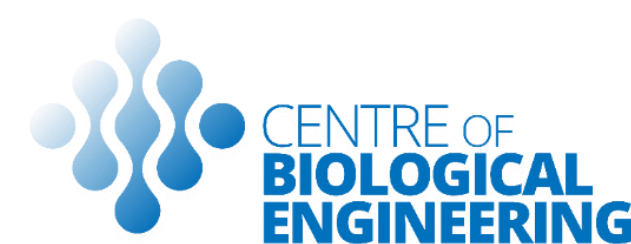
**15 spin-off/startup** companies were  
launched



**48 patents** conceded  
(last 10 years)



# Publications in Top Journals



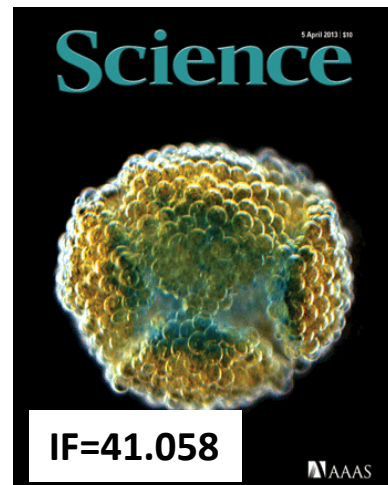
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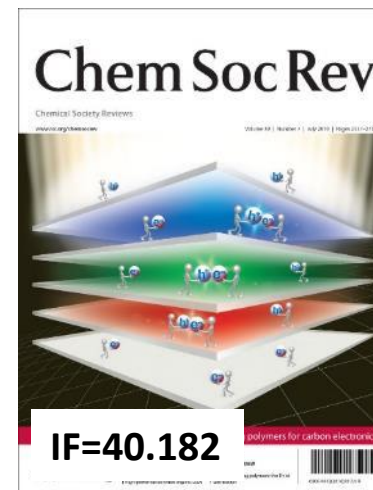
Krallinger et al. 2017



Hagai et al. 2018



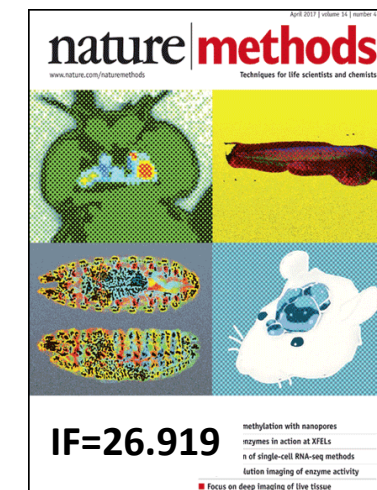
Liebensteiner et al. 2013  
Atashgahi et al. 2018



Shimanovich et al. 2014



Guinney et al. 2017



Svensson et al. 2017

- CEB stands amongst the R&D units with the highest number of Citations per paper in the Chemical and Biochemical Engineering area
- Several Top Hottest, Most Read and Most Viewed Articles: [www.ceb.uminho.pt/Publications/HottestArticles](http://www.ceb.uminho.pt/Publications/HottestArticles)





# Internationalization



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2 ERC Grants

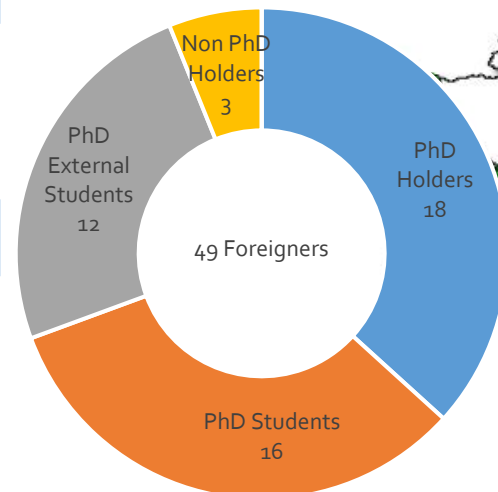
7 European Projects

Mobility of researchers (incoming researchers from 47 countries)

45% of papers published in co-authorship with international teams



Countries of origin of incoming researchers: **at present (21)** and **past (26)**





# Internationalization



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>80 institutions from 31 countries



# Industrial Partnerships



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# Intrapreneurial CEB



Universidade do Minho SPINOFF  
School of Engineering



EST. 2012  
Fórmula d'Avó  
2012

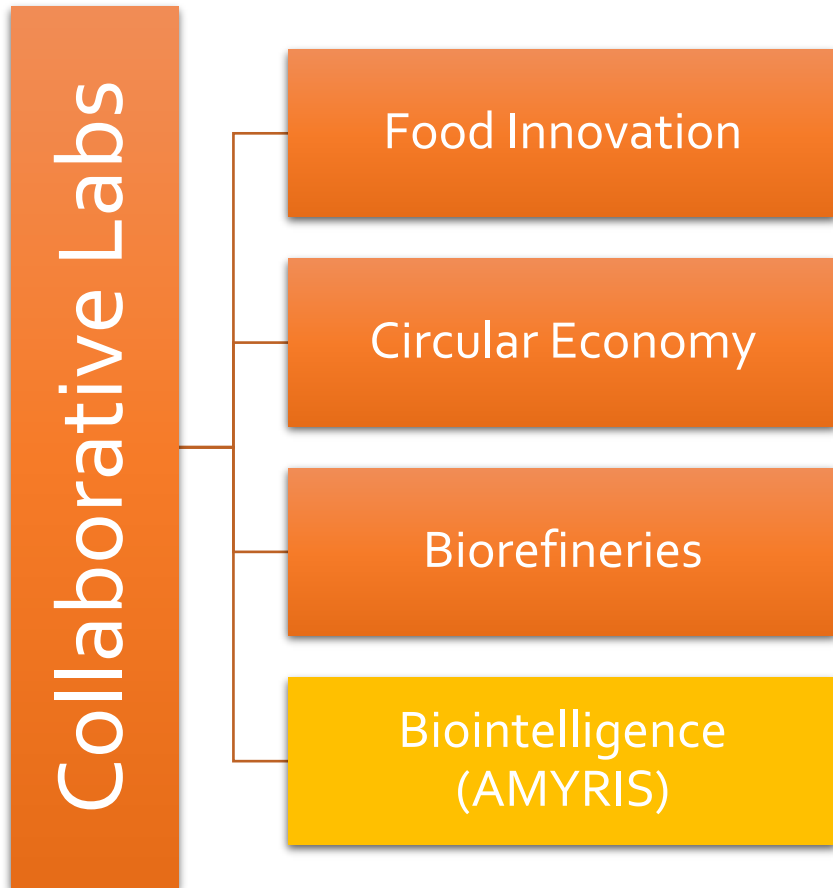




# Collaborative Laboratories



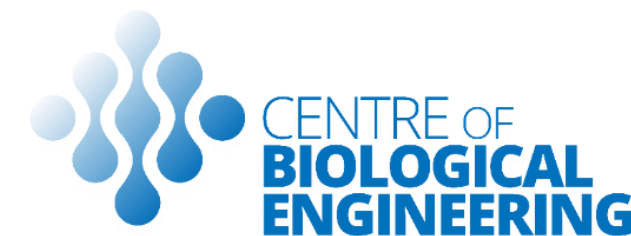
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# European & PT Research Infrastructures



## European Research Infrastructures (RI)



Pan-European RI for **Microbial Resources**, through Micoteca of the Universidade do Minho  
**European Coordination hosted at CEB**



Pan-European RI in **Structural Biology** through Portuguese Centre for Integrated Structural Biology



European Life Sciences RI for **Biological Information**, through **Biodata.pt**, the Portuguese distributed infrastructure for biological data

**EU-Openscreen:** High-capacity screening platforms through Europe



**EERA:** European Energy Research Alliance



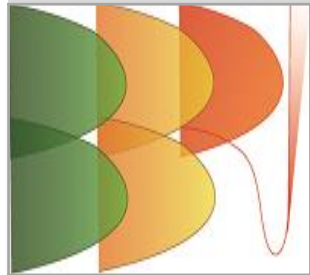


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# European & PT Research Infrastructures



## Portuguese Roadmap of RI



**Biomass and Bioenergy RI** aligned with the implementation plan of the European Industrial Bioenergy Initiative



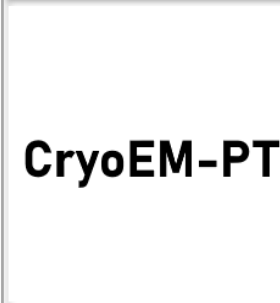
**Biodata.pt**  
the Portuguese Biological Data Network, distributed infrastructure for biological data



**PtmBRCN/MIRRI-PT:** Portuguese microBiological Resource Center Network



**PT-OPENSREEN:** Portuguese Network for Screening



**CryoEM-PT:** National Advanced Electron Microscopy Network for Health and Life Sciences



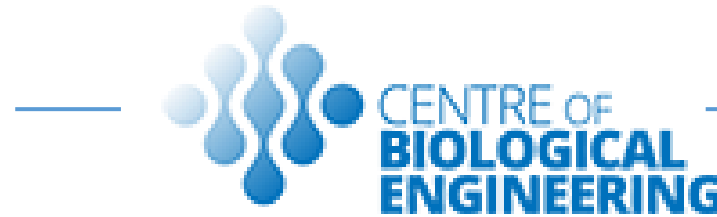


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# Portuguese research networks/clusters



AgroFood sector



Water sector





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Thank you for your attention!



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Website: [www.ceb.uminho.pt](http://www.ceb.uminho.pt)



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