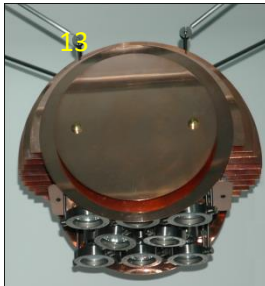


# ELONICA

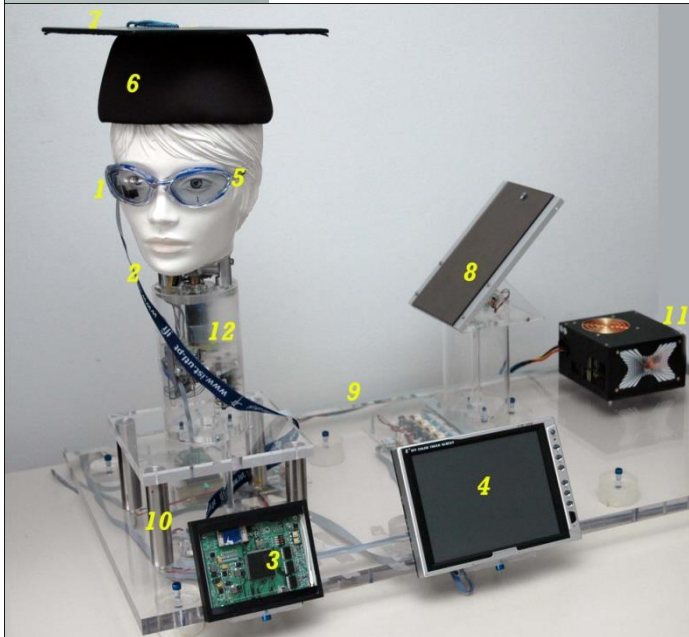
Authors: Moisés Piedade, António Nunes e José Vaz.

INESC-ID, and DEEC /IST, Lisbon

ELONICA is an interactive demonstrator of a Visual Prosthesis base on direct Stimulation of the Visual Cortex. Elonica is based on a motorized head of a girl model and was completed in October 2007.



ELONICA was supported by the Electrical Engineering Department of Instituto Superior Técnico, European research project CORTIVIS and FCT research project “ICONS – Intracortical Neuronal Stimulator”: PTDC/EEA-ELC/68972/2006.



1. Micro digital camera
2. Digital camera cable
3. Artificial retina processor
4. Video display of processing phases
5. Eye glasses
6. Robotized Hat
7. Solar panel
8. Optoelectronic display
9. Illuminated Acrylic Table
10. High power LED illuminators
11. Power supply
12. Motorized Neck with position sensors
13. Artificial Sun

Elonica is powered by 5 electric motors. Lithium ion batteries placed inside the head are recharged by the hat solar panel that captures the light produced by the artificial Sun.

Under computer control (not represented) Elonica head can be oriented to several objects illuminated by controlled lights. In the video monitor can be seen 4 images corresponding to different processing phases of the artificial retina (spatial and temporal filtering and retina coding spikes).

Hat can be tilted in order to see electronic circuitry and the wireless energy and data transmission system for the intracortical prosthesis developed in projects ICONS and CORTIVIS.

Elonica participated in several forums and exhibitions. See some videos about Elonica

<http://www.youtube.com/user/INESCID#p/u/1/7gKER3mvp6o> TVI

<http://www.youtube.com/user/INESCID#p/u/10/nJEmMd55jZo>

<http://sic.sapo.pt/programasinformacao/scripts/VideoPlayer.aspx?ch=falarglobal&videoid={0046B842-84F5-4555-8333-B69BCFC99720}>

<http://www.youtube.com/user/INESCID#p/u/1/7gKER3mvp6o>

<http://www.youtube.com/user/INESCID#p/u/2/UOHiz47BOjQ>

[http://www.ipjornal.com/noticias-tecnologia/ciencia/420135\\_projecto-cortivis-olho-artificial-para-invisuais.html](http://www.ipjornal.com/noticias-tecnologia/ciencia/420135_projecto-cortivis-olho-artificial-para-invisuais.html)

<http://clix.exameinformatica.pt/investigadores-portugueses-mostram-retina-artificial-para-cegos-video=f1004979>

See in real time the clinical operation of placing an implant on cortex

[http://www.dailymotion.com/video/x993dd\\_implante-cortical-visual\\_school](http://www.dailymotion.com/video/x993dd_implante-cortical-visual_school)

Related sites:

<http://www.youtube.com/watch?v=ZvxgOlkrjg&feature=related>

<http://www.youtube.com/watch?v=MnZ0pEzPGIU&feature=related>

<http://www.youtube.com/watch?v=xKAtQe78fMc>

<http://www.youtube.com/watch?v=GZ0G9odShF4&feature=related>

[http://www.youtube.com/watch?v=PisxXz4lJ\\_Y&feature=channel](http://www.youtube.com/watch?v=PisxXz4lJ_Y&feature=channel)

<http://www.youtube.com/watch?v=k-GFxbTJG0&feature=fvsr>

<http://sic.sapo.pt/online/noticias/programas/falarglobal/Artigos/Visao+artificial.htm>

[http://en.wikipedia.org/wiki/Visual\\_prosthesis](http://en.wikipedia.org/wiki/Visual_prosthesis)

<http://naranja.umh.es/~np/>

CORTIVIS e ELONICA

<https://slideplayer.com.br/slide/3691857/>

<https://www.goodreads.com/book/show/26715326-visual-cortical-neuroprosthesis-a-system-approach>

<https://www.dropbox.com/s/7njtemks68ojo8/Visual%20Cortical%20Neuroprosthesis%20a%20System%20Approach.pdf?dl=0>

<http://cortivis.umh.es/>  
<https://www.youtube.com/watch?v=nJEmMd55jZo>  
<https://www.youtube.com/watch?v=v4tcQl0HhWg>  
[https://www.researchgate.net/publication/310808469\\_CORTIVIS\\_Approach\\_for\\_an\\_Intracortical\\_Visual\\_Prostheses](https://www.researchgate.net/publication/310808469_CORTIVIS_Approach_for_an_Intracortical_Visual_Prostheses)  
<https://cordis.europa.eu/project/id/QLK6-CT-2001-00279>  
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<https://www.worldscientific.com/worldscibooks/10.1142/6777>