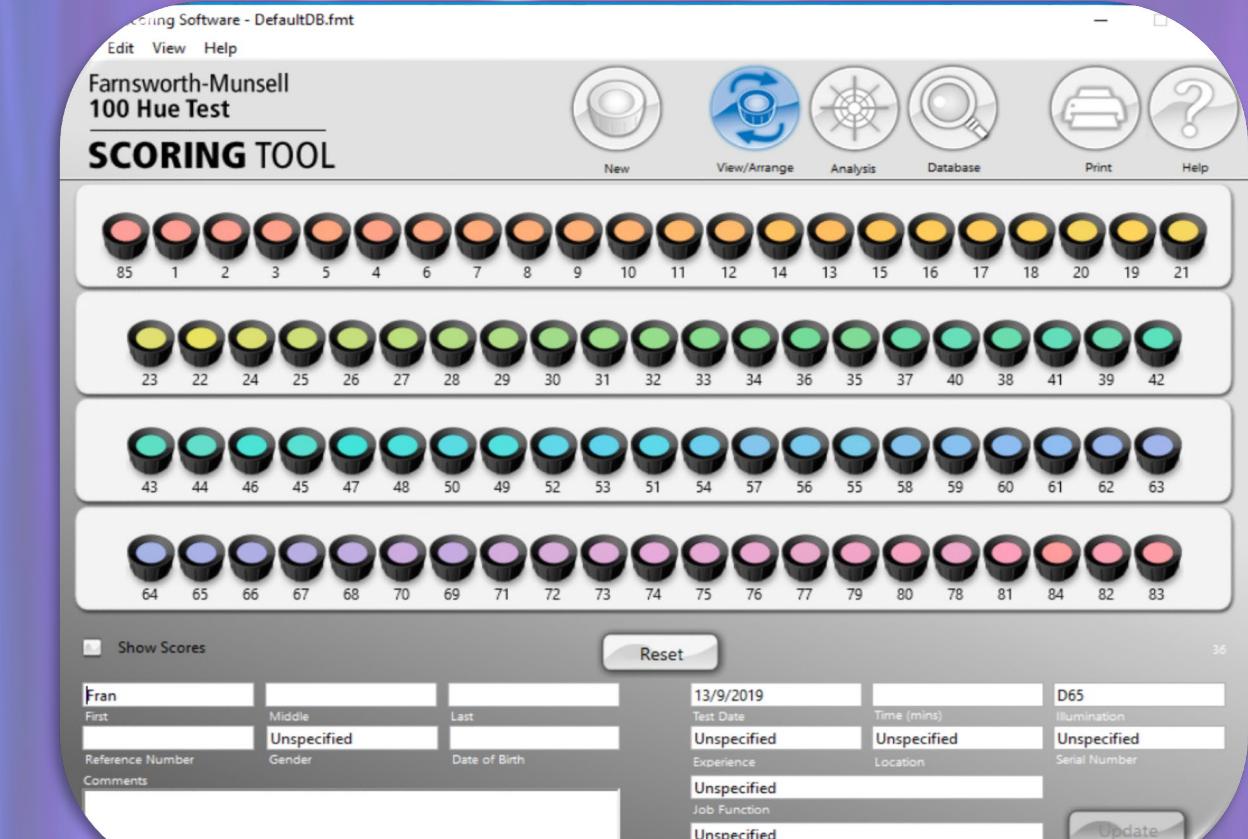
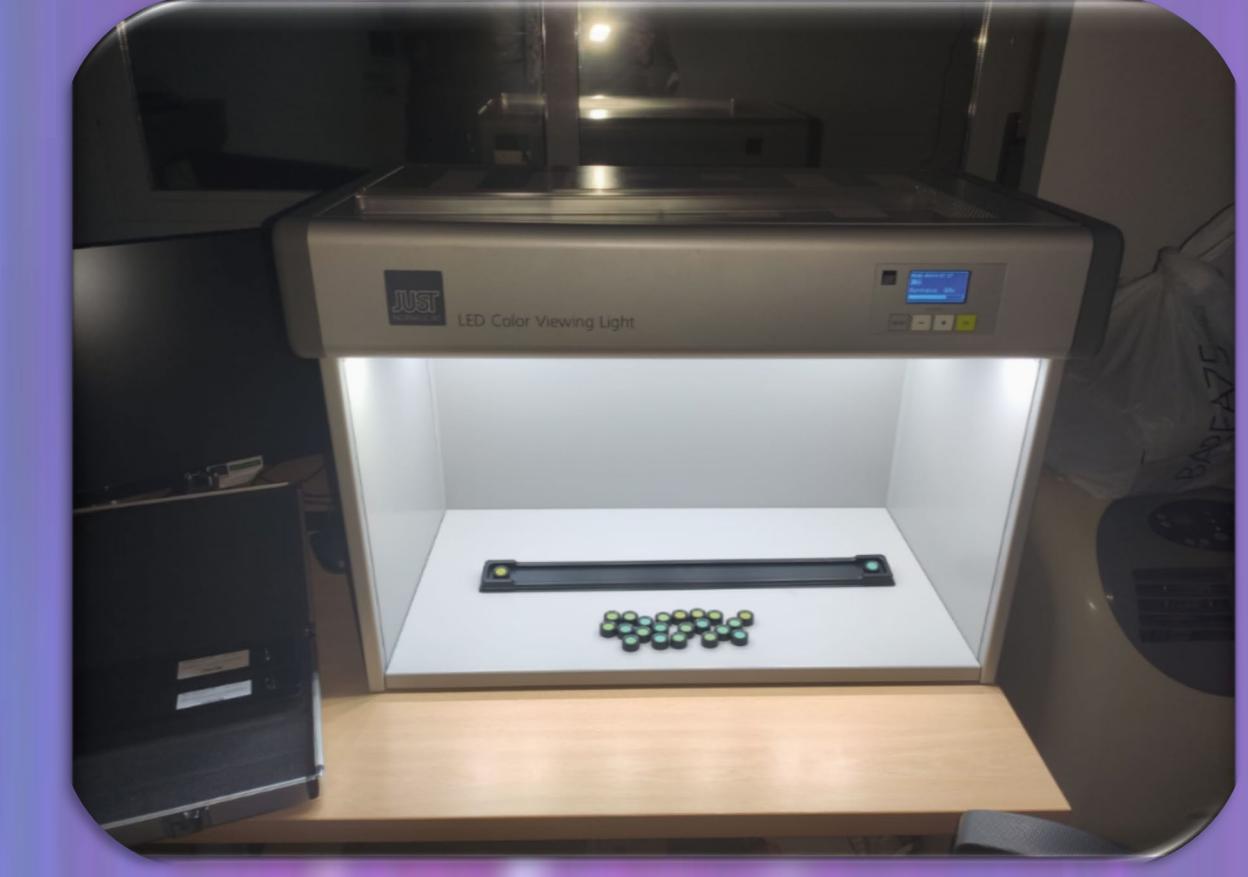
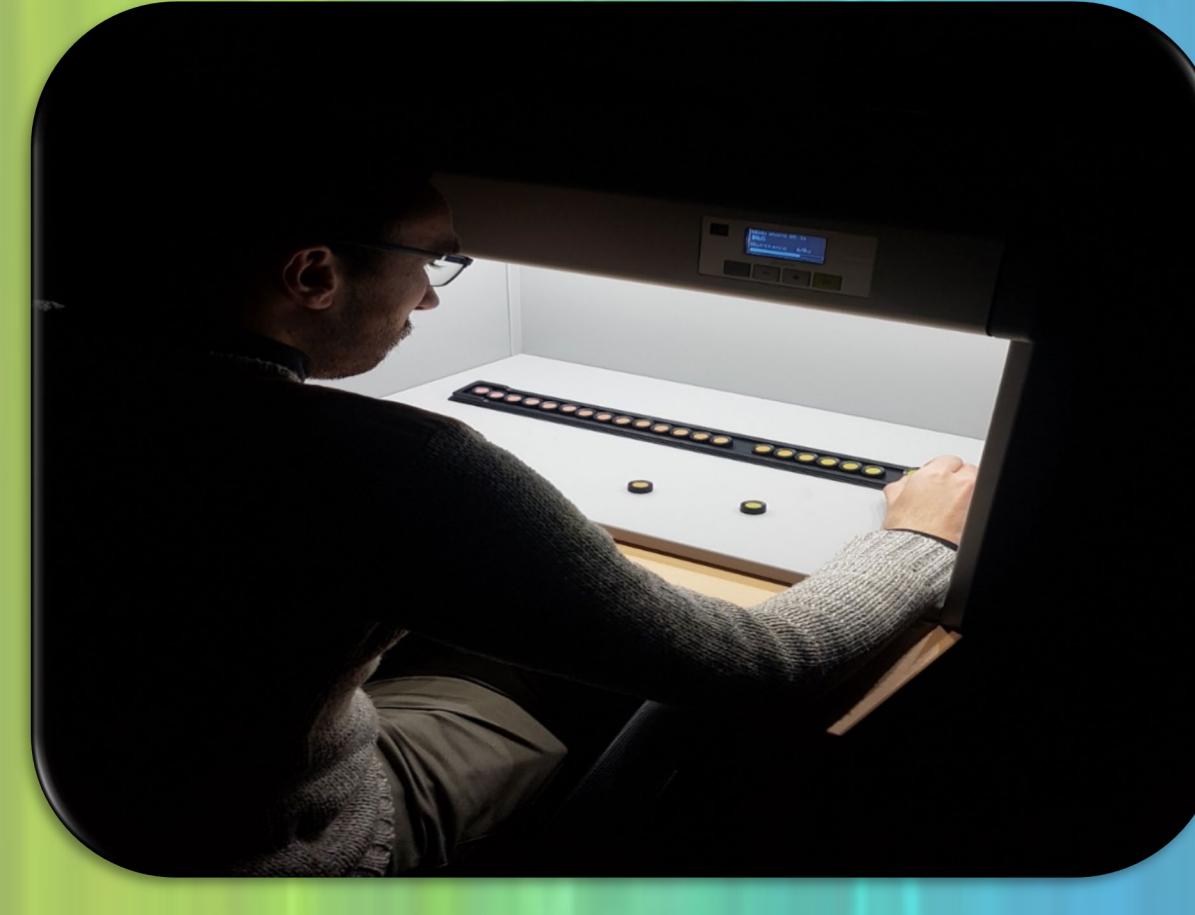


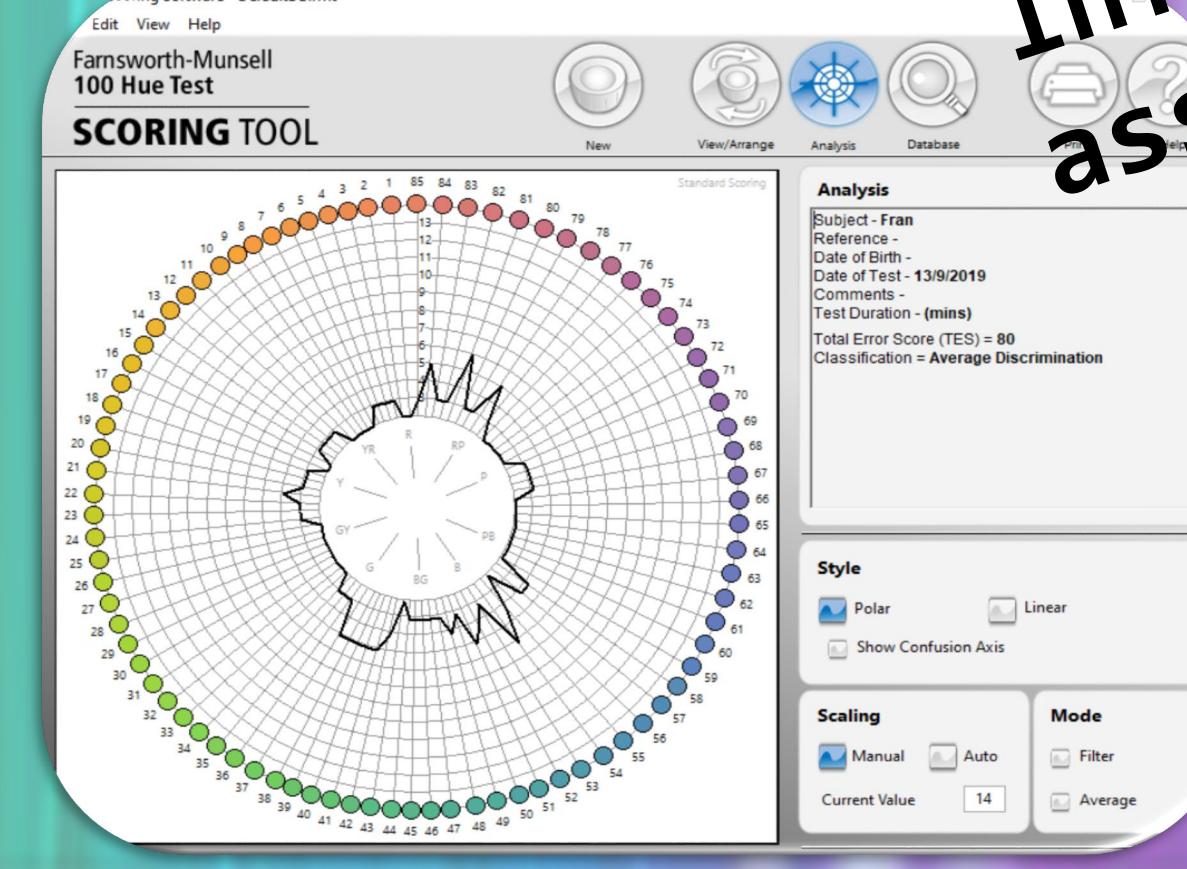
## Application of spectral computing techniques for color vision testing using virtual reality devices.

Authors: Halina Cwierz López, Francisco Díaz Barrancas, Pedro José Pardo, Ángel Luis Pérez & María Isabel Suero

### Test Farnsworth Munsell 100 Hue



Expiration two years or use  
Environmental factors influence  
Manual results entry  
Manual disarray



Information obtained not  
associated to the context

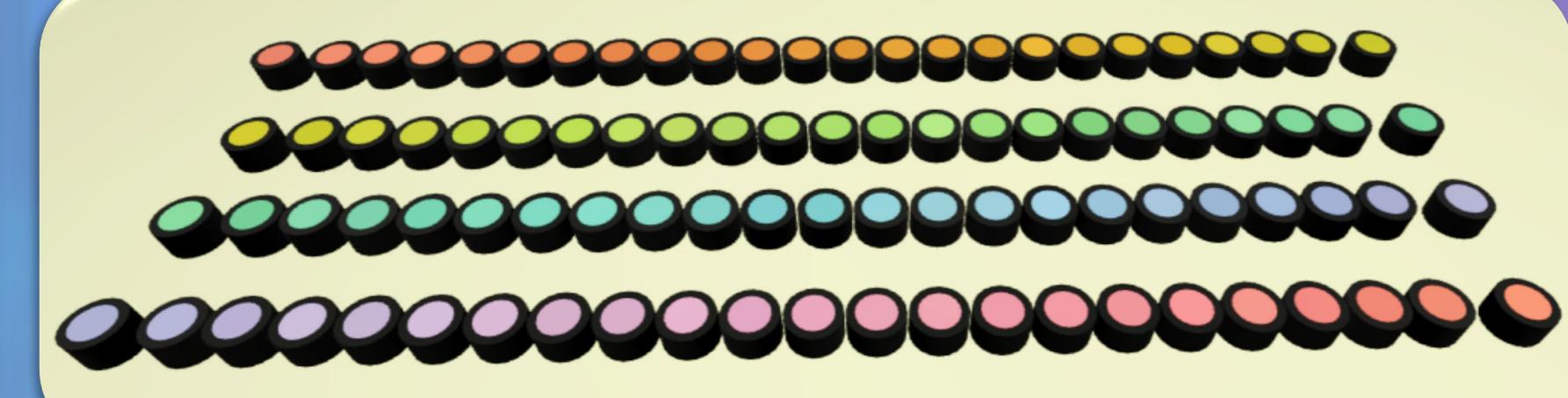
### Test Farnsworth Munsell 100 Hue Virtual



Spectroradiometer



Profile ICC



Spectral reflectance of the 85 test capsules

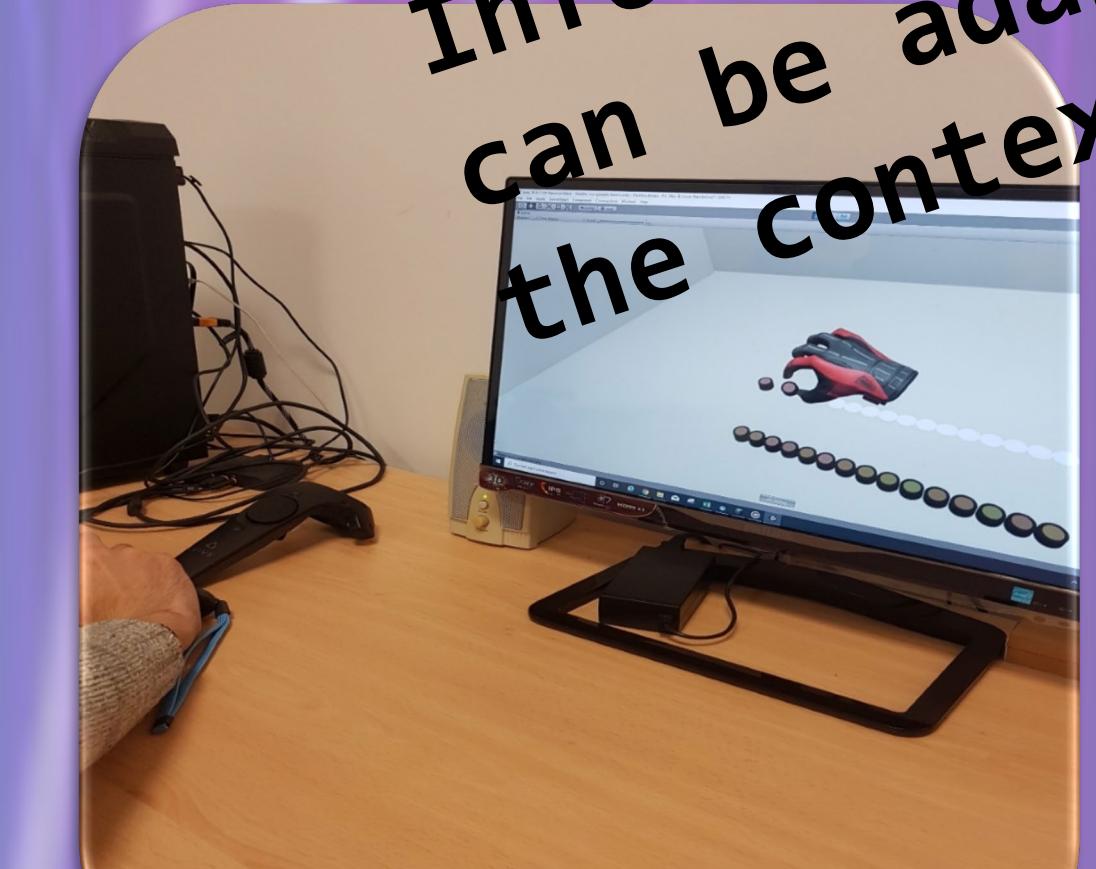
### TOOLS



C#



Not expiration  
Controlled environment  
Automatic results  
Automatic and random disarray



Information obtained  
can be adapted to  
the context

### RESULTS

The results shown are not definitive, due to a small population, we are completing those with more observers and tests.

### NOVELTY

The novelty of this work is based on introducing spectral techniques to improve the color rendition of a test for the assessment of the ability to discriminate color in virtual reality.

Observer			Physical test		Virtual test	
#	Age	Sex	Score	Time	Score	Time
1	27	W	0±0	15±4	24±0	20±6
2	26	M	4±0	10±1	25±13	15±6
3	26	W	6±3	9±3	40±10	24±5
4	45	M	9±13	7±1	23±15	18±3
5	56	W	25±14	7±3	27±5	16±3
6	54	W	36±14	6±1	45±18	12±2
7	56	M	44±14	10±5	92±23	11±5
8	55	W	47±5	6±1	101±63	14±2
9	25	M	189±8	8±2	191±108	17±4
10	25	M	212±9	9±2	268±60	9±3

W= Woman, M= Man, Time in minutes

### ACKNOWLEDGEMENTS

This work was supported by the grants GR18131 and IB16004 of the Regional Government of the Junta de Extremadura, and partially financed by the European Regional Development Fund.