

SALSA

Full Stokes Polarization camera



What measurements can be performed?

- Live full Stokes polarization imaging in the visible in passive or active configuration
- Live computation of any derived polarization parameter: DOP, DOLP, DOCP, AOP, Ellipticity.
- Passive and Active polarization imaging

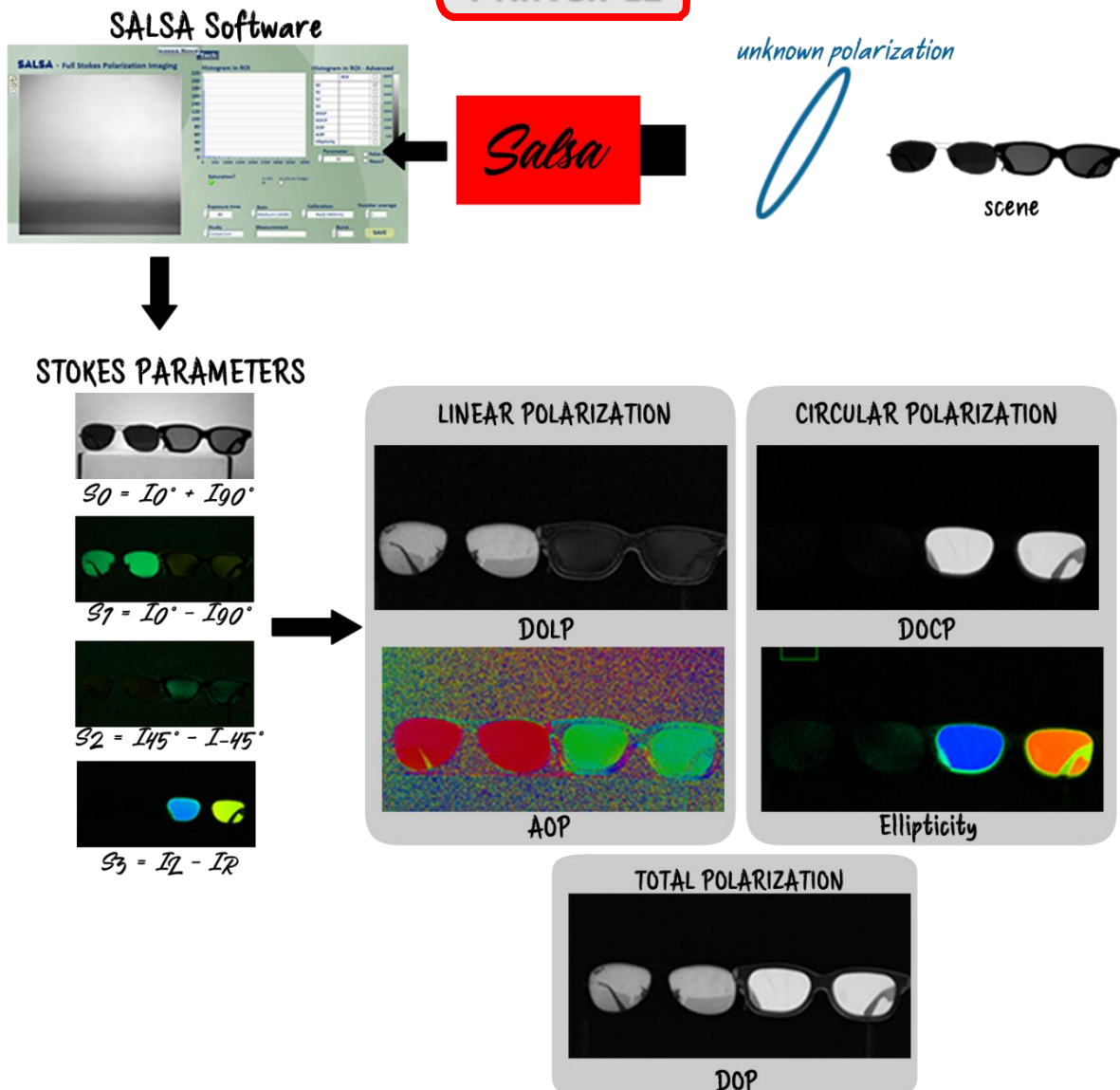
What does it enable?

- Retardance mapping / Stress measurement
- Stokes/Mueller imagery
- Contrast enhancement
- Target detection/identification

OVERVIEW

Along with the intensity and the spectrum, the polarization of light carries abundant information. The Stokes formalism allows for complete description of any partial or total polarization state. While most of the available polarization imaging cameras perform only linear Stokes polarization imaging (only the linear polarization can be quantified), SALSA performs live measurement of the full Stokes vector for each pixel of the image at a video frame rate. Many polarization-related parameters can be visualized in real time such as the Stokes parameters (S_0 , S_1 , S_2 & S_3), the Degree Of Polarization Linear (DOLP) or Circular (DOCP), the Degree Of Polarization (DOP), the Angle Of Polarization (AOP), the Ellipticity angle, etc.

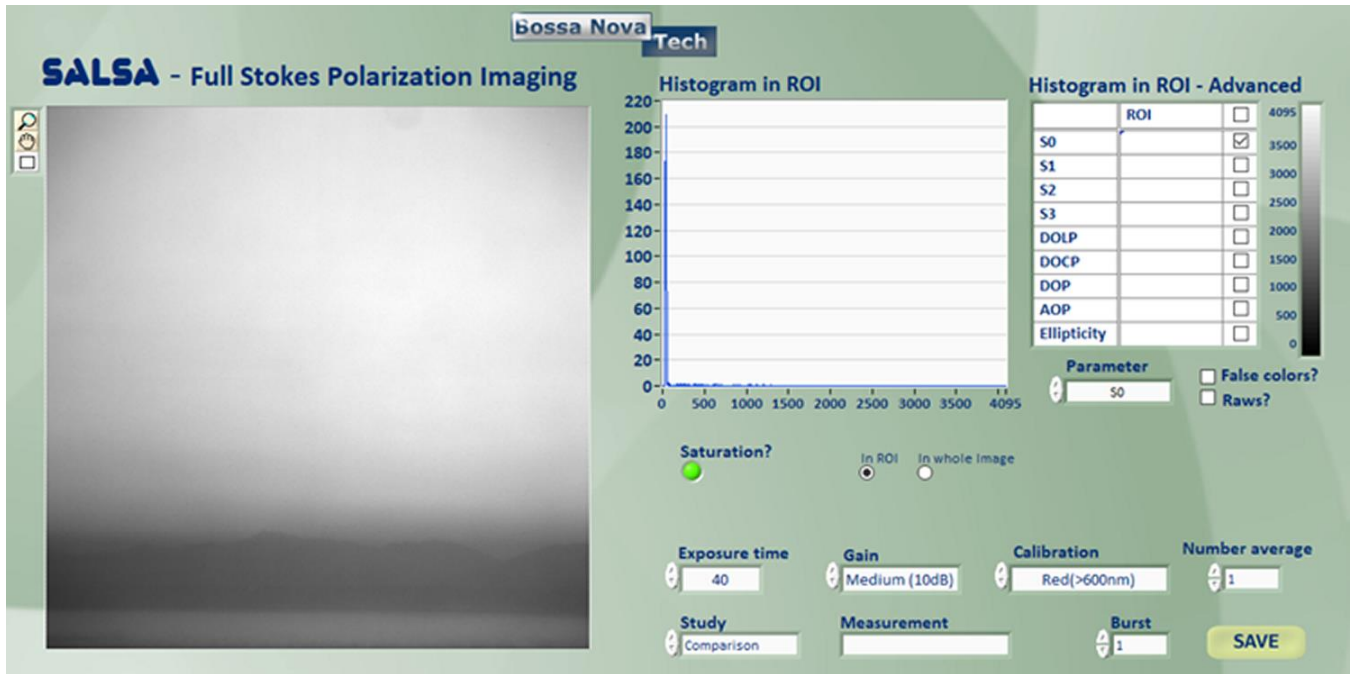
PRINCIPLE



This example shows two pairs of glasses.
Left ones are commercial anti-glare sunglasses (linearly polarized glasses);
Right ones are 3D-movie glasses (circularly polarized glasses)

SOFTWARE

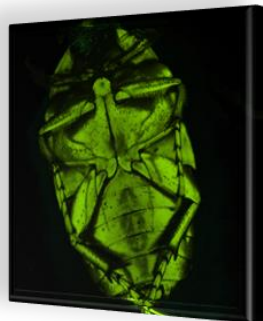
A user-friendly software allows a Full Stokes polarization analysis for each pixel of the image, in real time. The user can select a Region Of Interest and visualize all polarization data in live or in analysis mode, save images and record polarization movies.



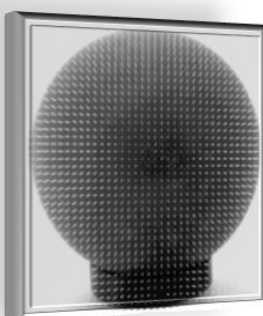
ONE CAMERA, MANY APPLICATIONS



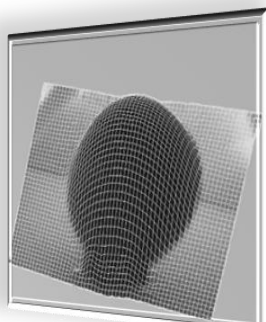
Biology



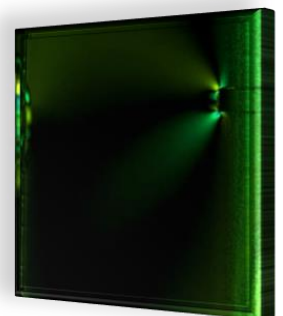
Target detection



3D reconstruction



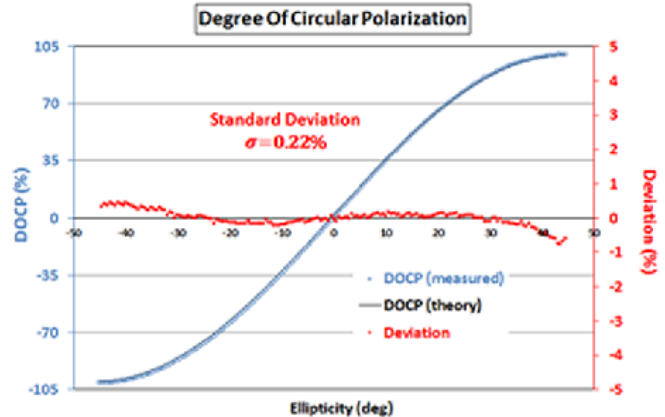
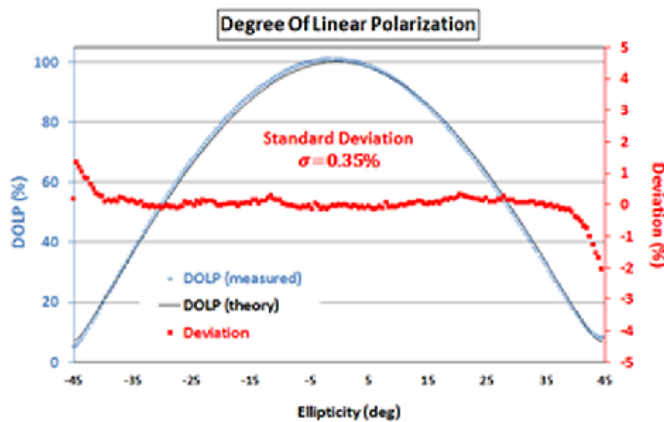
Stress mapping



SPECIFICATIONS

Camera Size	3.2"x3.2"x4" (80mmx80mmx100mm)
Video Format	GigE
Resolution (pixels)	1040x1040, 1600x1200, 1920x1080
Frame rate for a 1040 x 1040 resolution	12 fps (12 bits) – 20 fps (8 bits)
Digitalization	8 to 12 bits
Synchronization Interface	USB
Spectral Bandwidth	520-550 nm (custom in visible wavelength upon request)
Calibration	Factory calibrated
Lens mount	C-mount (other option available upon request)
Software	SALSA 2.3

SALSA is calibrated in the factory for a specific bandwidth. The typical precisions for Degree Of Linear Polarization is 3% (P-V), 0.35% STDV, and for Degree Of Circular Polarization: 2% (P-V), 0.75% STDV.



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