



keep your eyes young

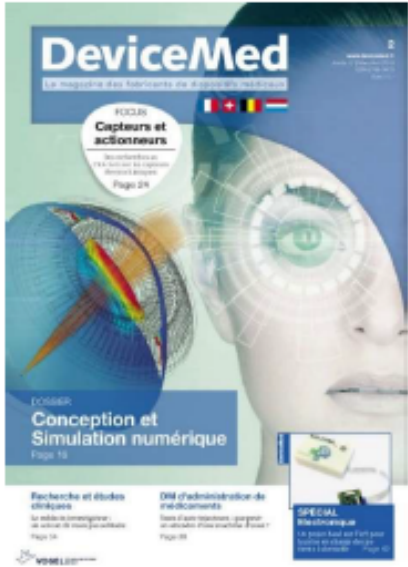
A. BEGLE

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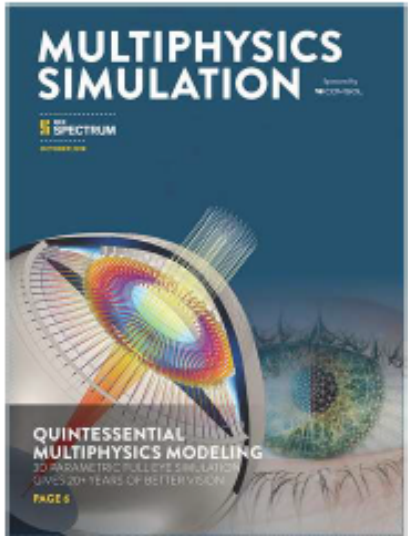
31.05.2024





First and proprietary **3D full eye parametric model**. Linked with **Multiphysics computational modeling** in order to simulate full eye normal optical and mechanical behavior and any disorder consecutive to eye disease.

This model has been built first for **research and development** purposes as a powerful tool of understanding, experimentation and providing a **numerical proof of concept** for a potential solution.



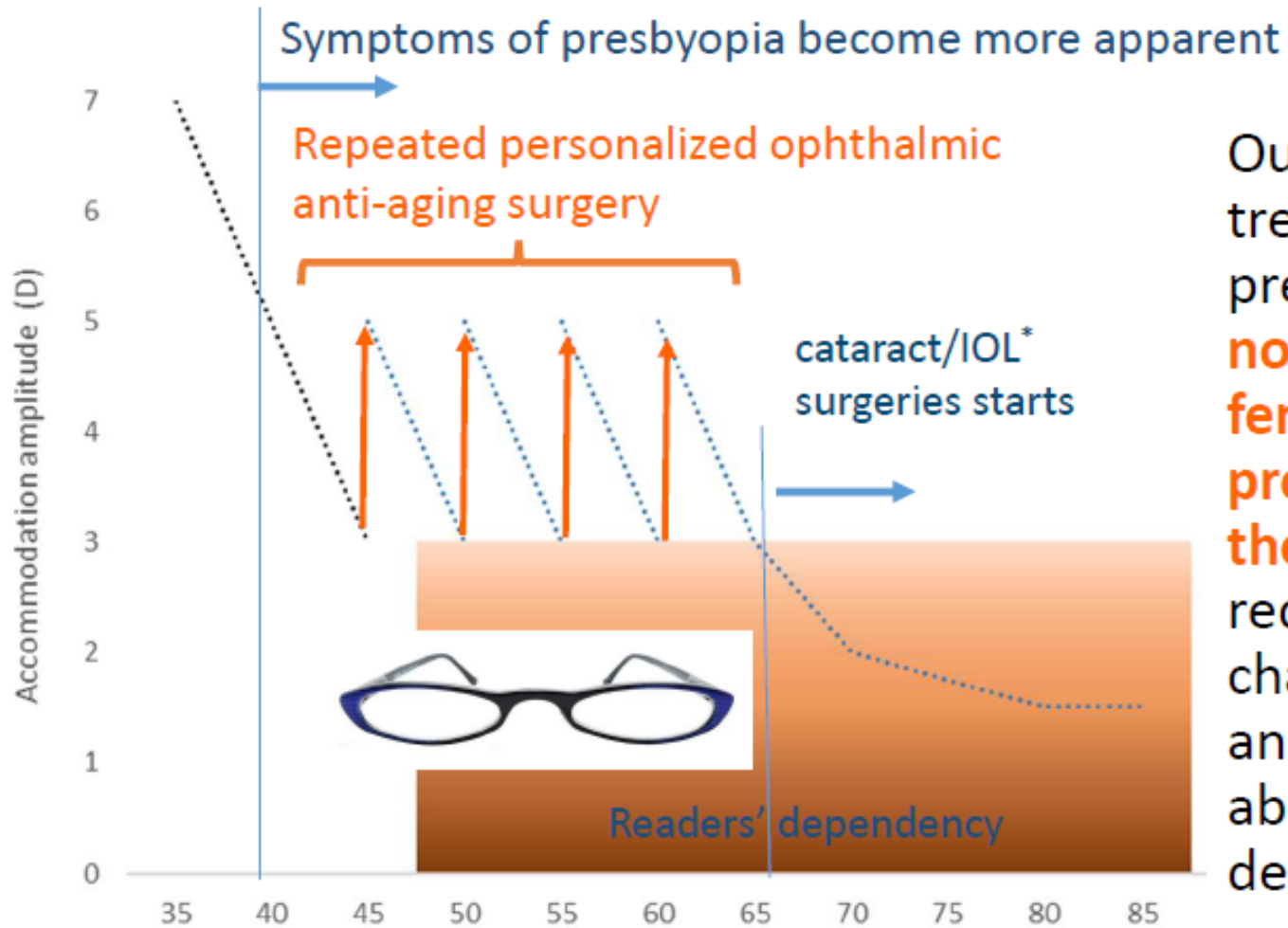
Eventually it will be used to **optimize each patient's treatment**, plan and control the corresponding customized procedure.

From theory to practice, modelling has led to the development of sophisticated crystalline fiber femtosecond laser processing.

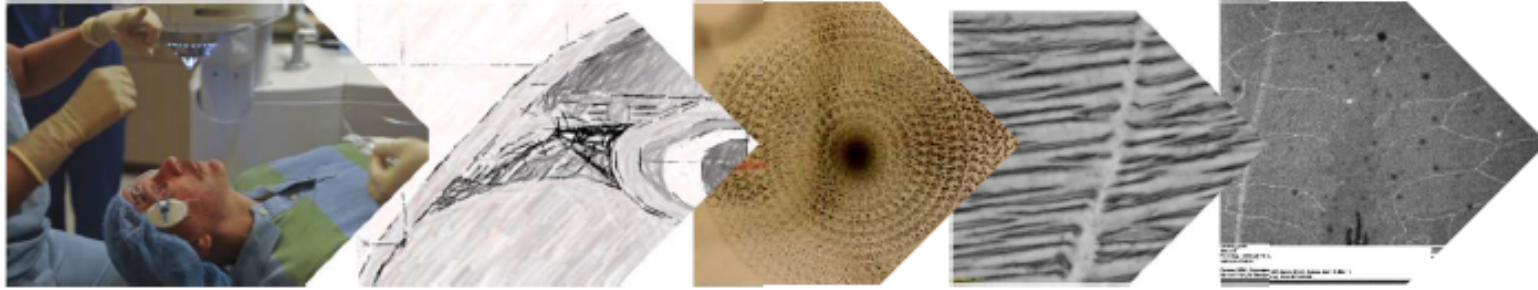
KEYWORDS

- First and proprietary
- 3D full eye parametric model
- Multiphysics computational modeling
- R&D purposes
- Validated for the visual accommodation analysis and presbyopia simulation (>50 eyes)
- Numerical proof of concept
- Femtosecond laser
- Path to individualized medicine

 Our technology treats the root cause of presbyopia, not its symptoms



Our **customized solution** treats **the root cause** of presbyopia through a **non-invasive repeatable femtosecond laser procedure** that **modifies the lens structure** to reduce its stiffness, change its refractive index and keeps the patient above the zone of dependency on glasses.



The root cause of presbyopia is that the crystalline lens is stiffening with age, and we understood that, instead of treating the symptoms, we must provide new elasticity and refractive capability to this lens.

Kejako's research process leads to **major innovations at the crystalline lens level**: the breakthrough restoration of accommodation amplitude by **Phakorestitution** which will become the quantum leap in Lentotomy.

A specific customized pattern design and laser energy modulation will induce new optical and mechanical properties in the lens to retrieve natural lens functions and without inducing cataract.

A **1,5 diopter**, recovered **actual dynamic visual accommodation** will be available again instead of a basic optical static correction.

Phakorestitution will be customized, through the power of our **parametric eye model**, to reach the highest possible level of safety & performance.

DETAILS

- The root cause of presbyopia is the loss of crystalline elasticity and refractive index modification
- Customized non-invasive modification through Femto-laser
- Specific design to create new mechanical and optical behavior
- Customization: Volume treated, shape and position depending on the patient
- Safe femtosecond laser treatment



Ex-vivo Proof of Concept and in-vivo safety: process, characterization and results

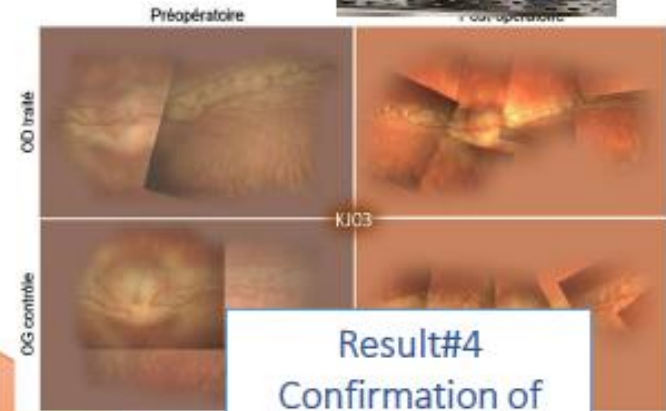
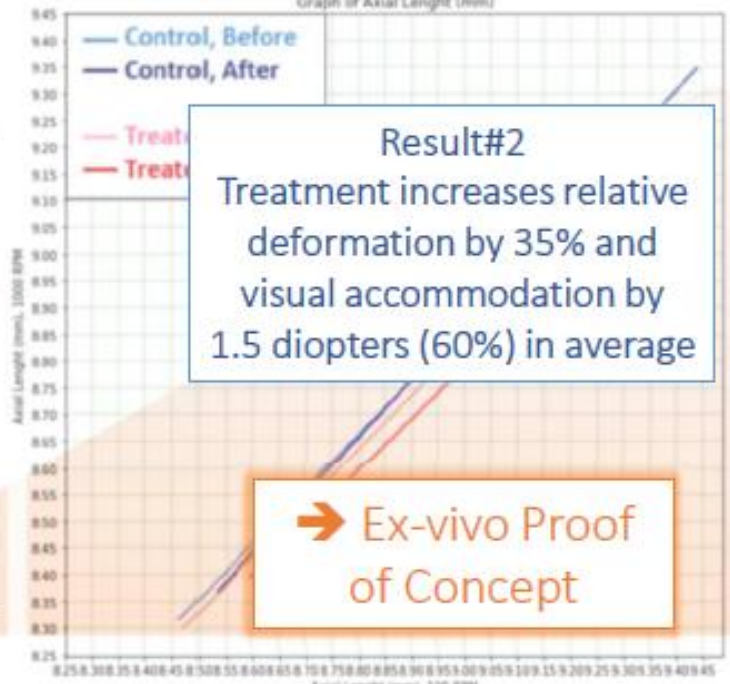
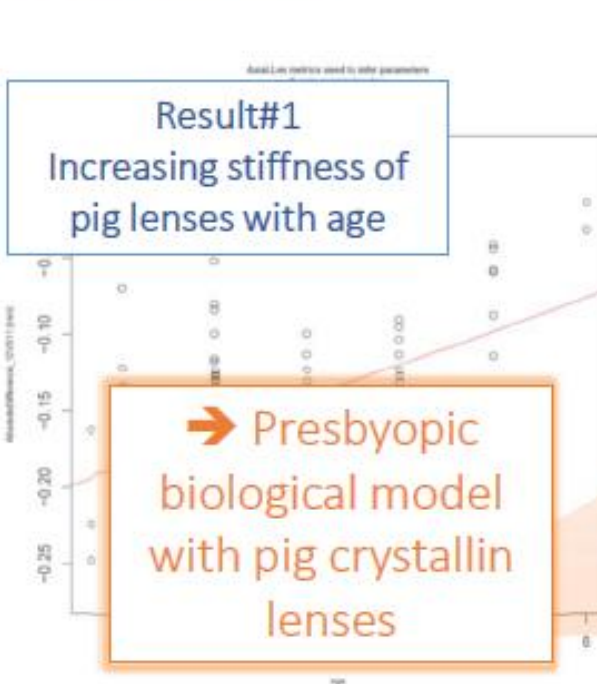
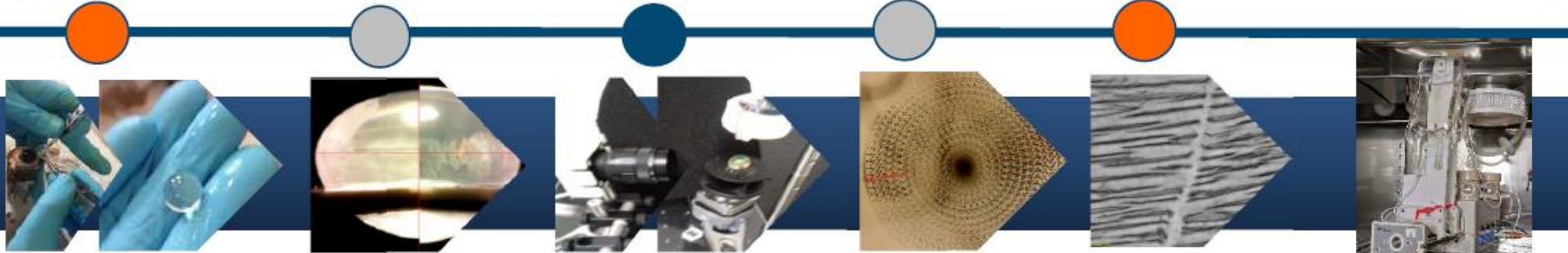
Pig eye dissection

Mechanical and optical characterization

Laser treatment

Histology

Pre-clinical animal study



Result#4
Confirmation of safety in vivo (rabbits)

→ Design of the treatment



In-Vivo Safety

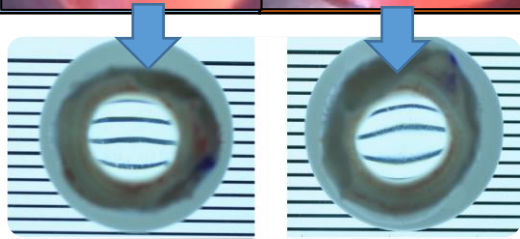
	KJ01 Control Eye	KJ01 Treated Eye Energy 1	KJ02 Control Eye	KJ02 Treated Eye Energy 1	KJ03 Control Eye	KJ03 Treated Eye Energy 2 > Energy 1
Day +0						
Day +7						
Month +2						

- ✓ Healthy retina
- ✓ No cataractogenesis after 2 Months
- ✓ No affect of surrounding tissues after 2 Months

✓ Complete Resorption with higher energy !



No Evolution



Transparency



PRIX MEDI'NOV



Thank You for your attention



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