

Toward Dynamic Artificial Crystallinus?

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Having been a pupil in Optometry at UC Berkeley of Larry Stark, in turn pupil of Norbert Wiener - the founder of Cybernetics at MIT - my homeostatic interests are focused on close loop feedback, like the fascinating one changing our sight focus by accommodating crystallinus.

The significant prevalence of cataractes, mainly due to the sudden increase of life length in the recent decades. thanks to antibiotics, nutrition, hygiene, lack of wars. poses the question how to build a dynamic artificial crystallinus.

Multifocus crystallinus is already commercial, as glasses, but that is obviously different, implying an active eye or even head movement of the subject in order to voluntarily choose the focus, thus letting him the controlling feedback, non to say about uncomfot.

But a true autofocus, like the ones nowadays present in almost all reflex cameras, is not even available for glasses. As in every dynamic control problem, there are at least 3 technological issues: how to sense distance; how to decide focus; how to make the lens accommodate to such focus.

About the third issue, at Leeds University a Physics postdoc is studying liquid crystals as lens components as keen to reorientate to vary global refractivity. The point is how to drive such process: electromagnetical wiring prove to be useful in vitro but less easy to make *in vivo*.

Piezo thanks to eye muscles could be a viable alternative, provided a passive focus measurement is obtainable like in phase comparison of a couple of different split images of the target like in some reflex autofocus.

A discovery not as needed as the totally implantable diabetes control, but still waited for by the many people suffering of cataract, and even progressive presbiopy, where surgical corneal correction could not be one shot like for steady myopic.

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