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**** WITHDRAWN ** Adaptive endoscopic imaging of brain**

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With the continued miniaturization of endoscopic imaging tools, the use of mechanical adaptation (focusing, etc.) becomes difficult. This is particularly true for the “mobile” or portable implants, including the freely behaving animals. In the current presentation we shall describe the concept of a motion less adaptive imaging on the example of a stationary (still large) system using liquid crystal micro lenses. Fixed gradient index and electrically tunable liquid crystal lenses (TLCL) were used to build the imaging optical probe. A focal shift of approximately $74 \pm 3\mu\text{m}$ was achieved by electrically controlling the lens TLCL. The potential of the system was tested by imaging neurons and spines in thick adult mouse brain sections and in vivo, in the adult mouse brain at different

focal planes. Our results indicate that we can further modify our imaging system and obtain its miniaturized version for mobile applications

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