Title: Confinement and electrostimulation system for mechanical testing of muscle fibres using a universal testing machine

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Abstract: The design and assembly of a system for electrostimulation and muscle mechanics measurement of fibres using a universal testing machine is presented here. Most of the elements used in the design are easy to procure, except for the force measurement machine; however, this machine is of common use in biomaterials laboratories. The designed device is versatile enough to adapt to almost any universal testing machine under low levels of load with high reliability and reproducibility. The proposed design is useful for scientists involved in muscle mechanics research, wishing to develop their own apparatus in a relatively economic and reliable way.

Keywords: muscle mechanics; electrostimulation; confinement system; universal testing machine; muscle fibres; force measurement; biomaterials.

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