

# Automated Vitrification and Warming System

## Are you facing the following problem?

- Embryologists are under huge pressure due to heavy workload
- Not satisfied conception rate of bovine embryos
- Ranch fails to meet the warming conditions: it lacks embryologist and the lab equipment.



Fully Automated Vitrification-Warming System (4-Channel)



Fully Automated Vitrification-Warming System (2-Channel)



Automated Vitrification Warming and Embryo Loading System

Globally Innovative Exclusive Product

## ► Performance

**A one-step solution.** Automate the embryo processing steps during vitrification and warming. **Reduce variability caused by manual operations.**

No site restrictions, **no microscope and embryologist needed**, can be warmed and direct transfer on-site in the ranch!

## ► Advantages

### High Throughput

12 vitrification vessels can be processed continuously with 4 channels, achieving **vitrification rate up to 108 embryos/hr and warming rate up to 216 embryos/hr.**

### Stable

Enhance stability by reducing manual errors through easier operation.

### Compatible

Compatible to manual vitrification and warming process and storage. Providing a more standard and reliable option.

### High Successful Rate

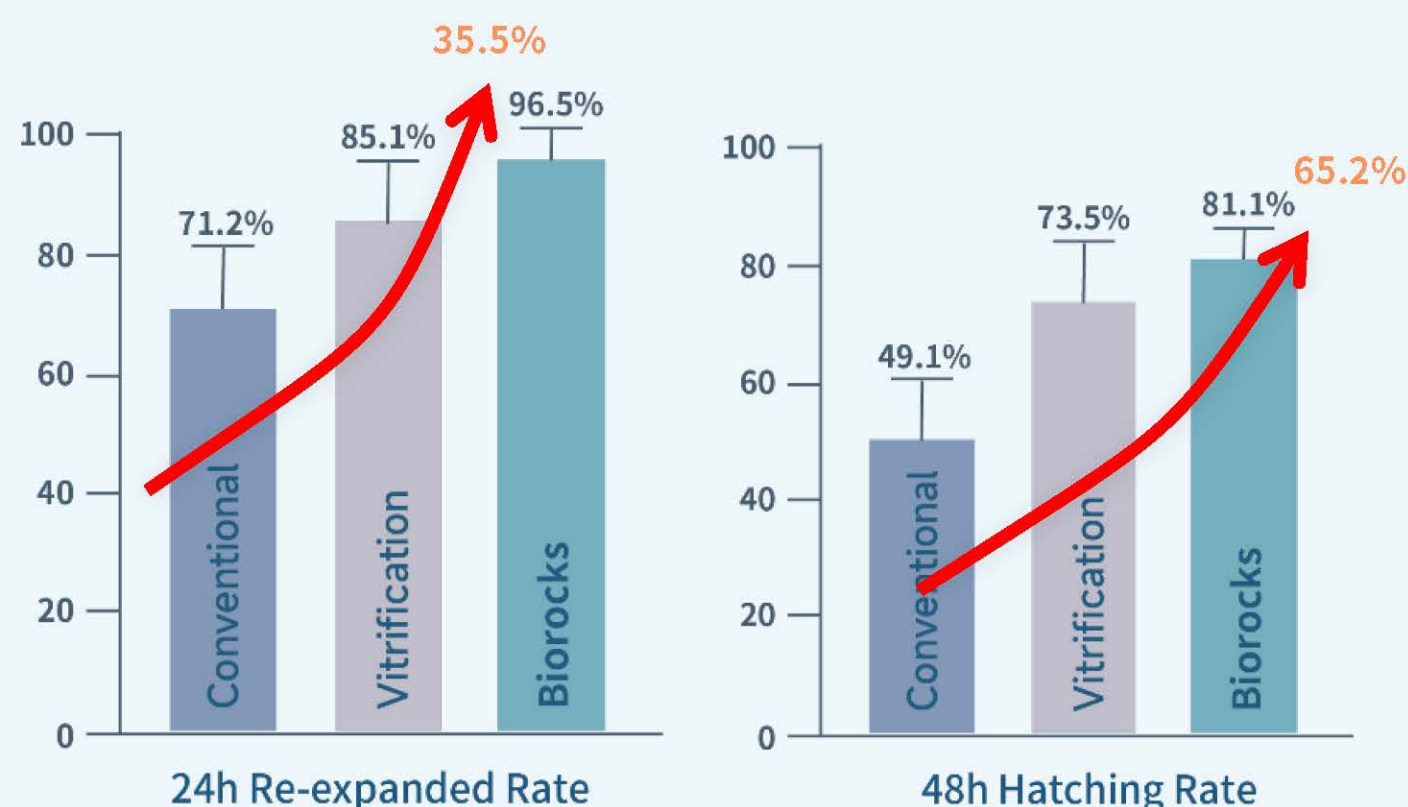
Biorocks automated system can significantly reduce embryo damage during vitrification and warming, as proved by literature. **Significantly improved results: conception rate consistent with fresh embryos.**

### No Restrictions

No site restrictions, no microscope needed, can be warmed on-site in the ranch.

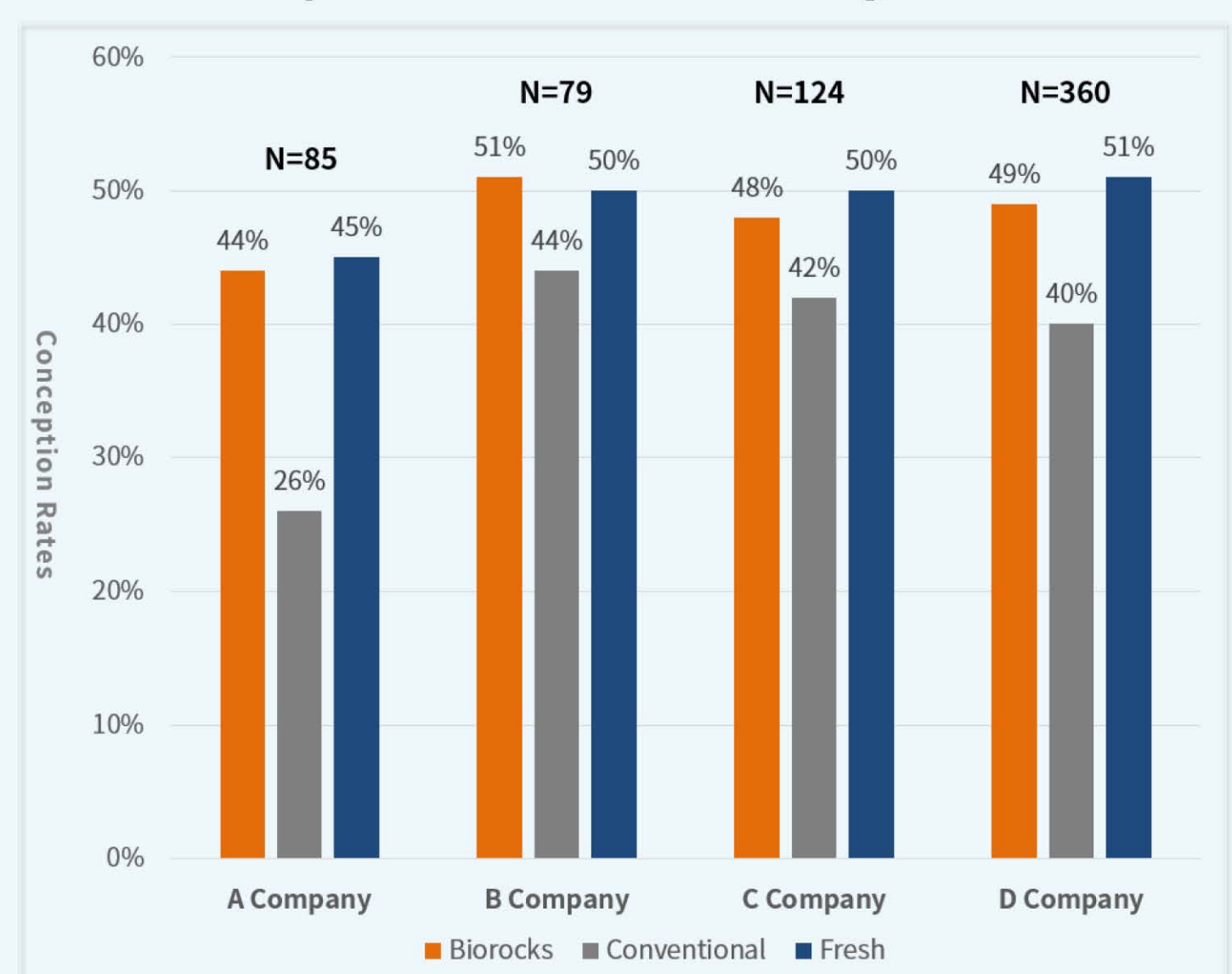
## ► Data

### Biorocks VS Manual Operation

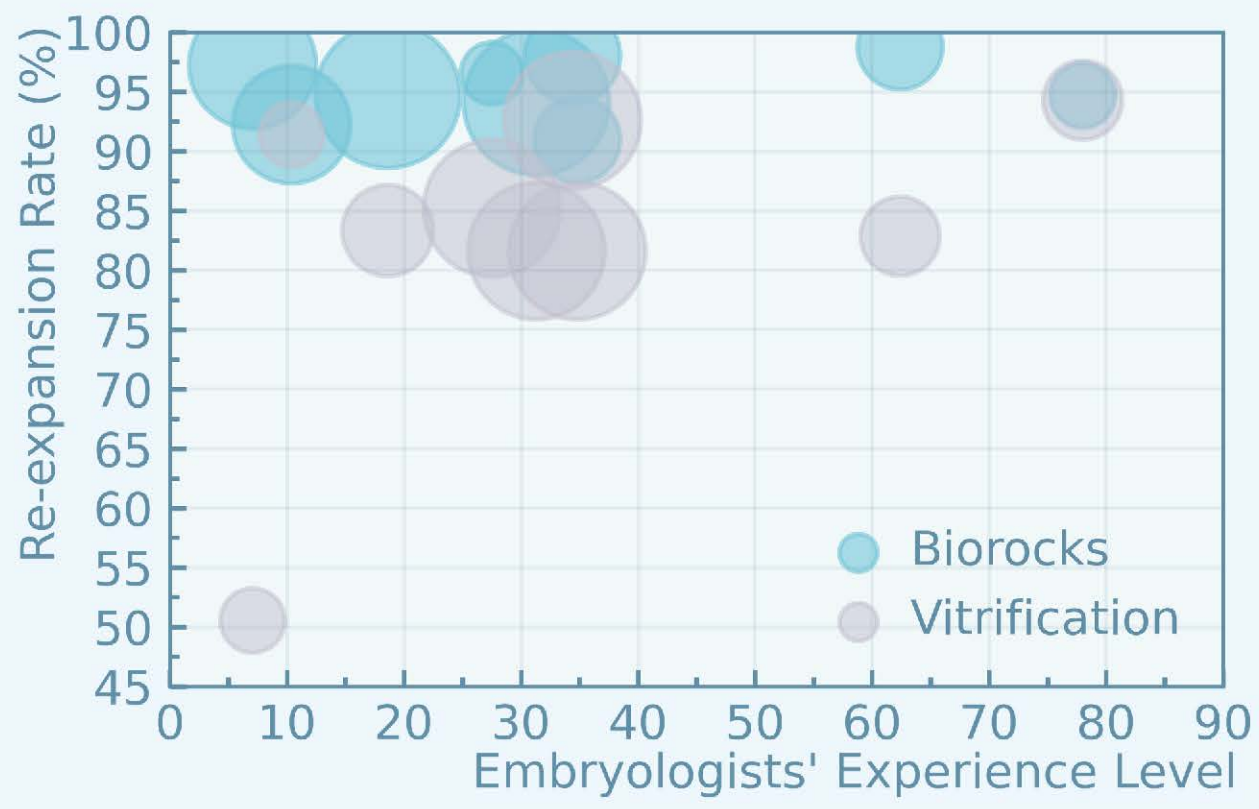


Experimental data confirms, Using Biorocks Automated System for freezing and thawing bovine embryos, the 24h re-expanded rate and 48h hatching rate are significantly better than those achieved with manual vitrification and slow-freezing methods.

### Comparison of Conception Rates between Fresh Embryos and Different Freezing Methods

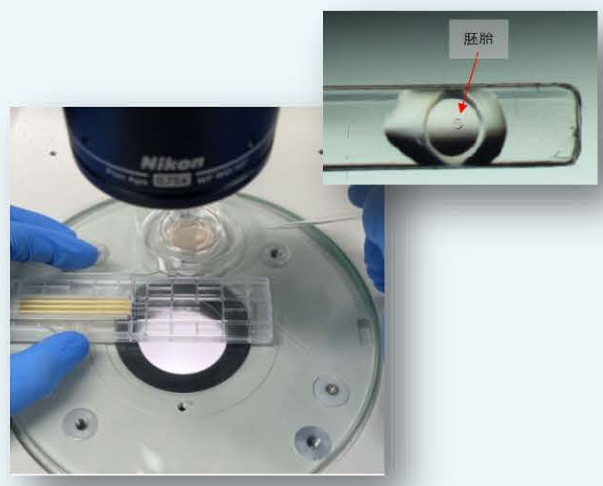


## ► Difference between Manual and Automated Approach



Manual vitrification and warming shows significant variability even with experienced embryologists. In contrast, vitrification and warming with Biorocks system significantly reduced variability even with **beginner Embryologist**.

## ► Vitrification Procedure



Transfer embryos into the vessels



Start the vitrification protocol



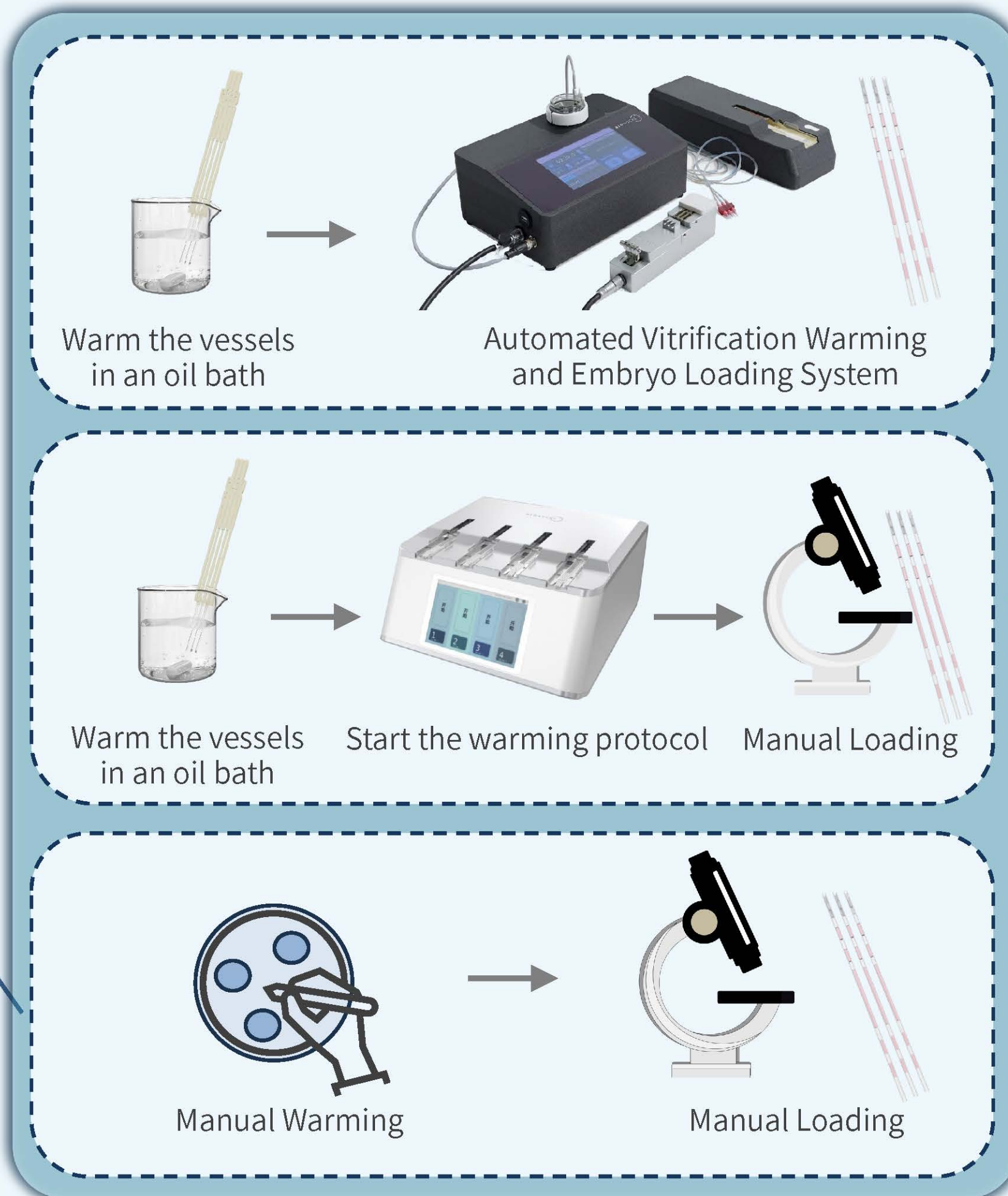
Plunge the vessels to liquid nitrogen

With four independent channels, the system can continuously process up to 12 vitrification vessels, achieving a vitrification throughput of up to 108 embryos/hr

## ► Warming Procedure



Take out the vessels



Install the Straw onto the Transfer Gun



Embryo transfer to recipient animal



Dr. SHU



Website



Wechat Public Account



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