

ICC Meeting

INNOVATIONS IN COMPRESSION THERAPY

Shape Memory Textiles for Functional Compression Management

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Textile based Compression System



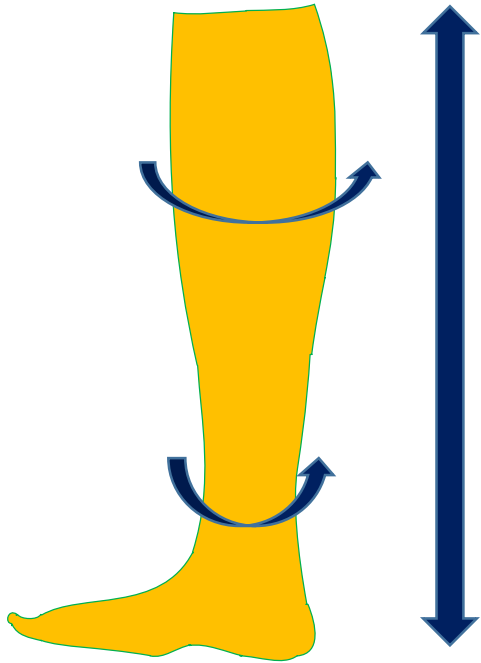
Bandage



Stocking

Current Challenges

1. Problem of size selection



Measurement	Small	Medium	Large	Extra large
Ankle circumference	-----	-----	-----	-----
Calf Circumference	-----	-----	-----	-----
Length	-----	-----	-----	-----

Headache for Manufacturers

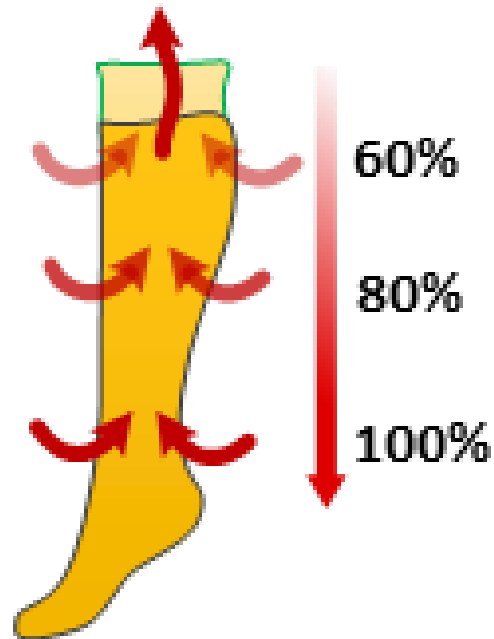
Current Challenges

2. Problem in stocking application – Donning challenge



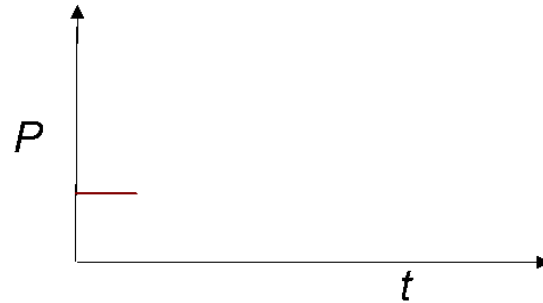
Current Challenges

3. Challenge in achieving desired pressure



Current Challenges

4. No Massage Effect



1. Problem of size selection

2. Donning challenge

3. Challenge in achieving desired pressure

4. No Massage Effect

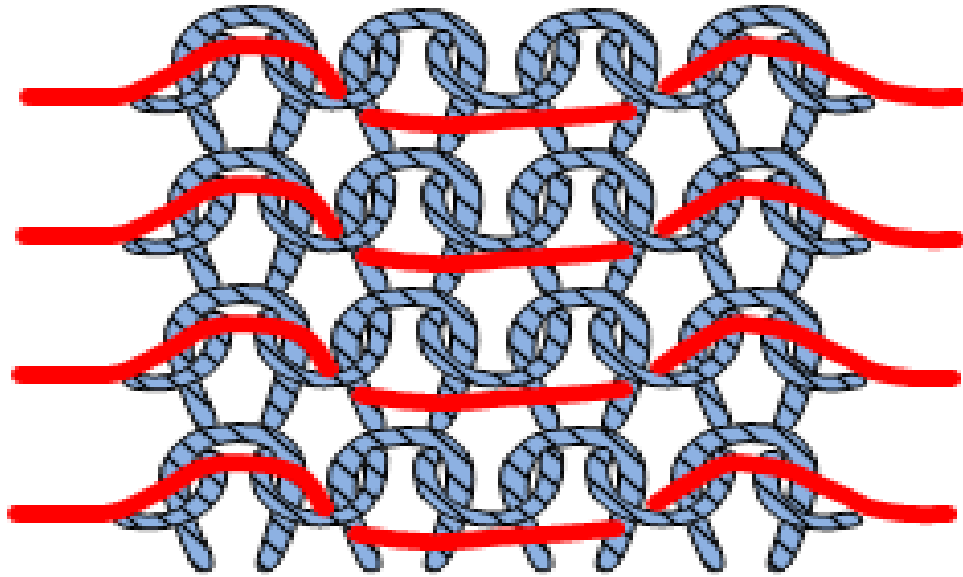
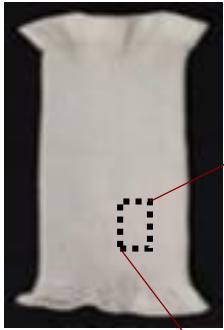
Is it possible to solve these problems using a conventional textile?



Smart Textile



Smart Textile

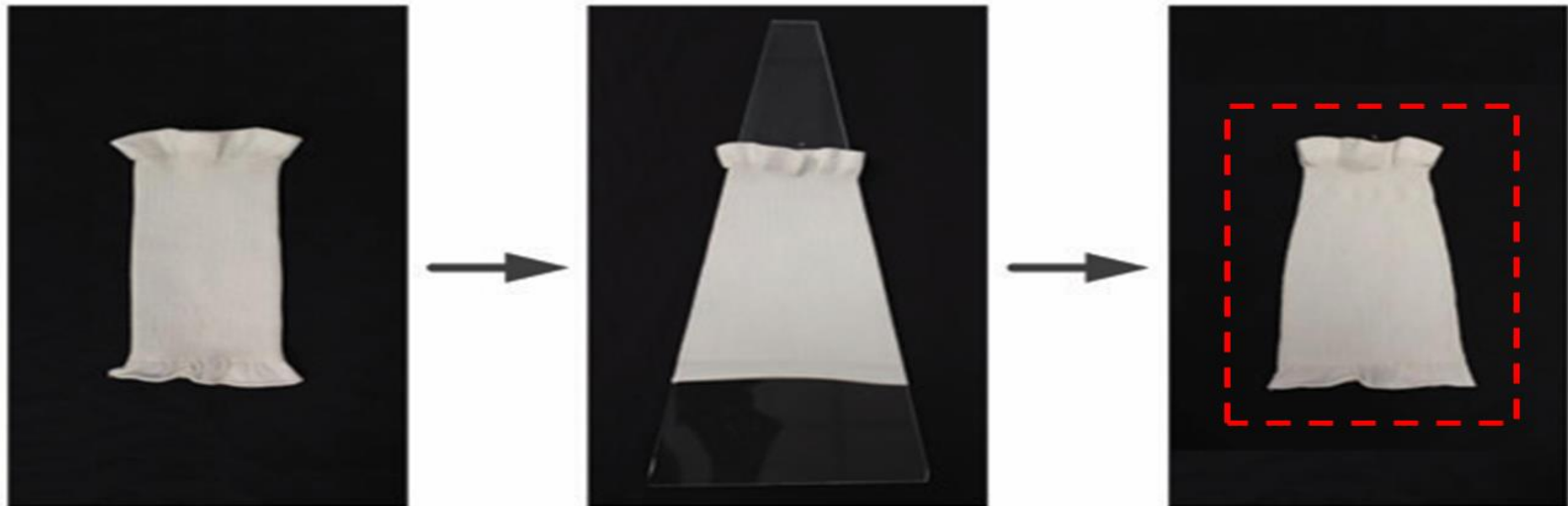


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Smart Textile

1. Customized Shape Development



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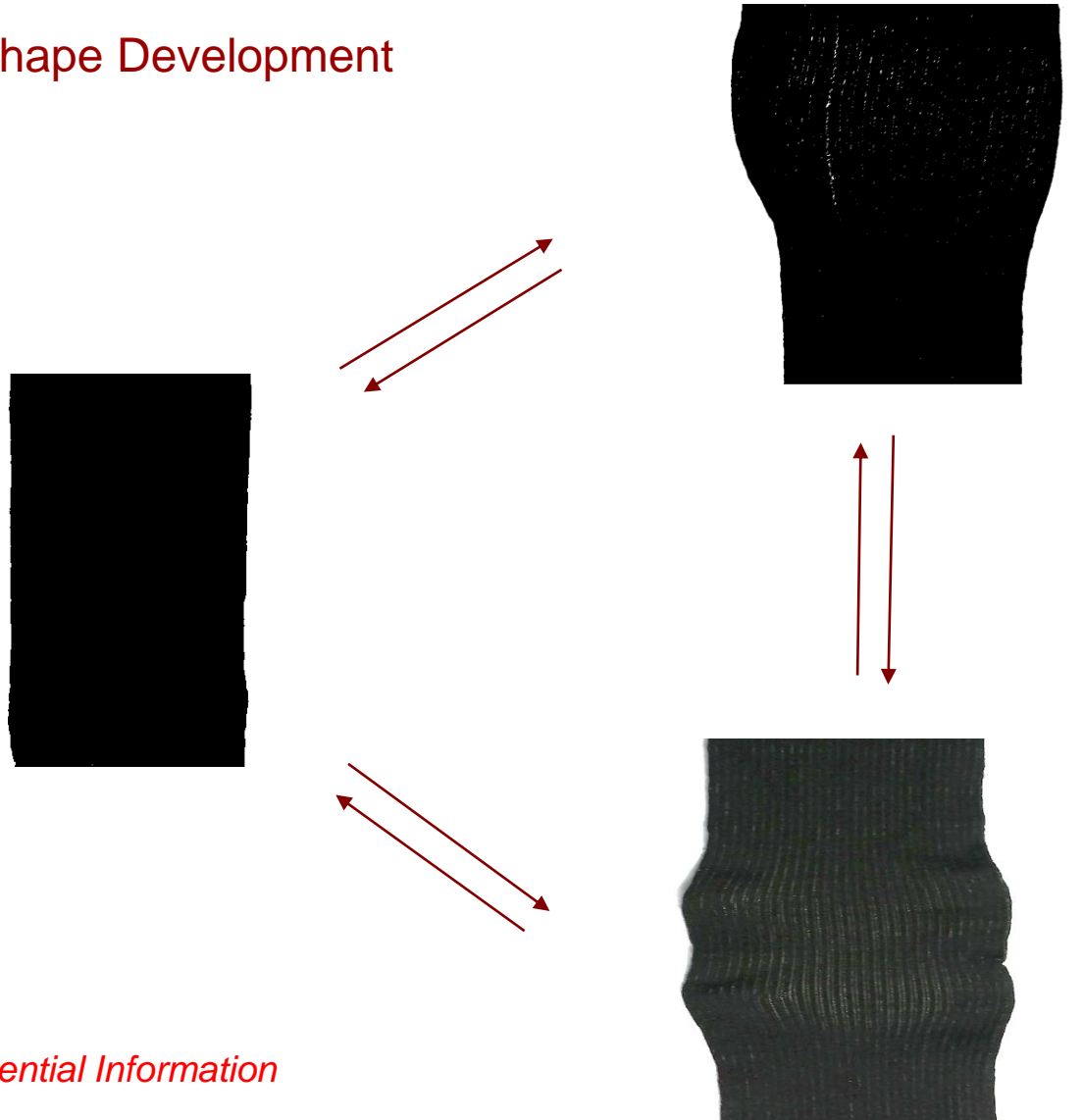
1. Customized Shape Development



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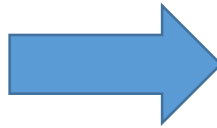
1. Customized Shape Development



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1. Customized Shape Development



up to 100%

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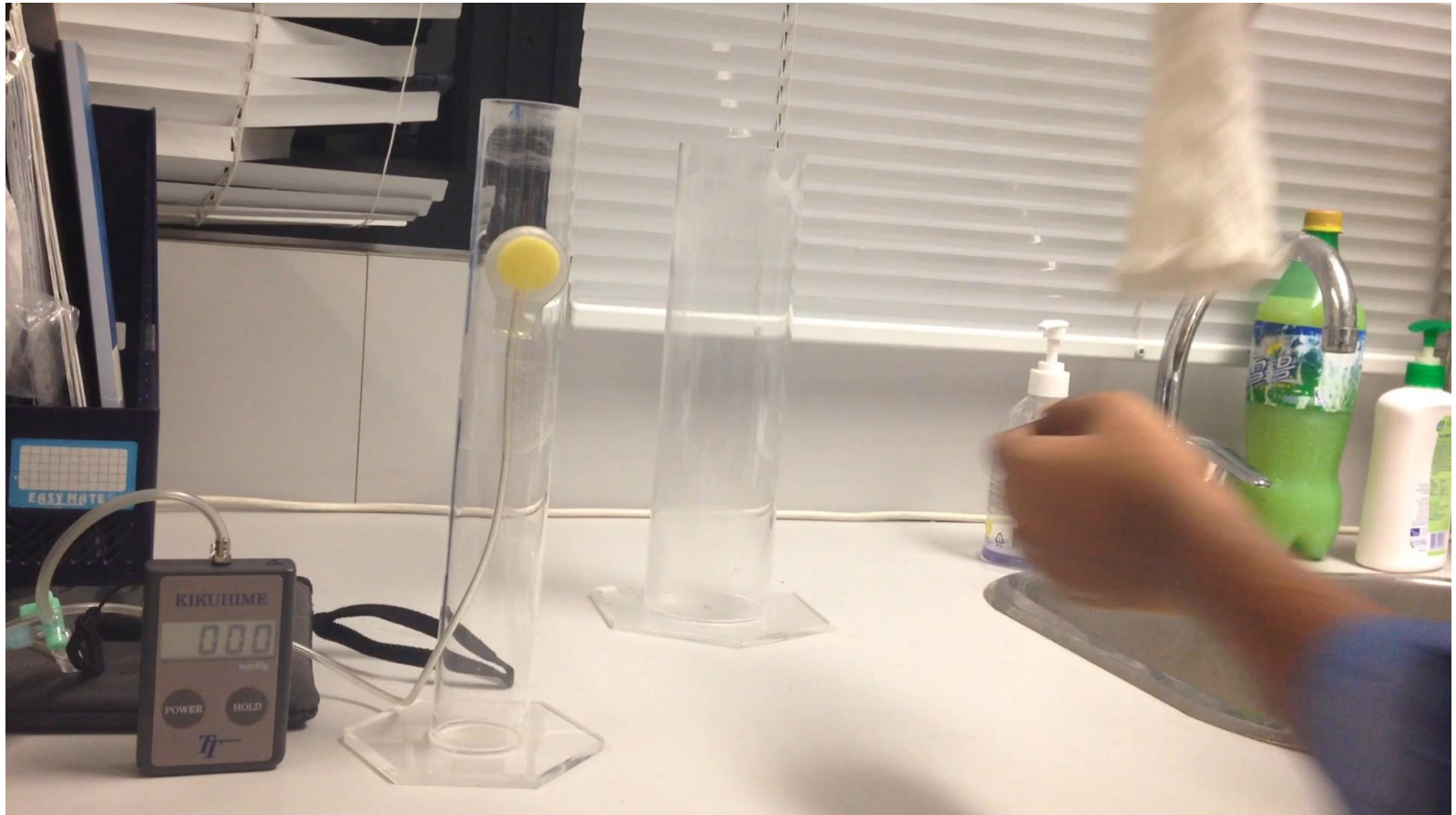
2. Easy Donning



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2. Easy Donning



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3. Pressure Control



$P = 0 \text{ mmHg}$



$P = 7 \text{ mmHg}$



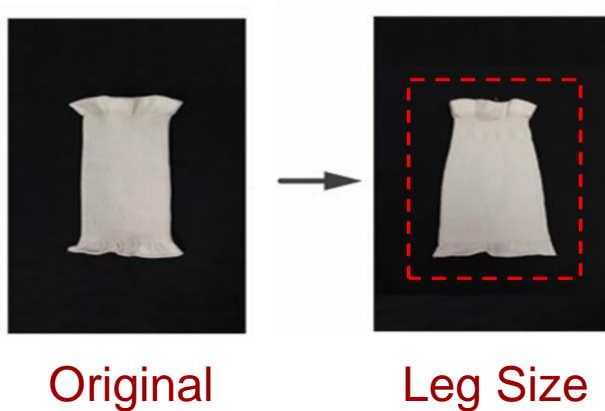
$P = 15 \text{ mmHg}$

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3. Pressure Control

How to adjust pressure without pressure sensor???

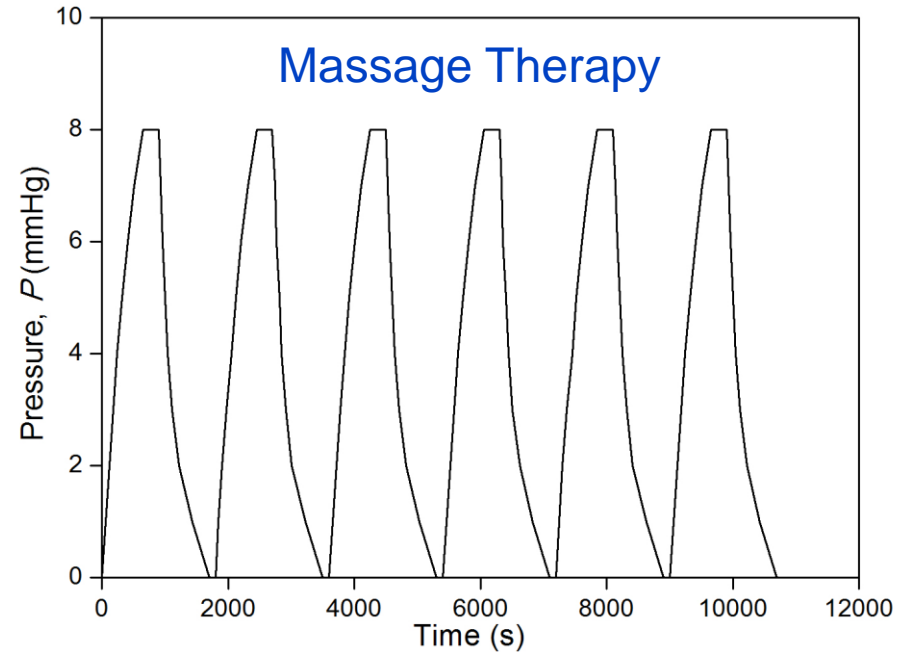
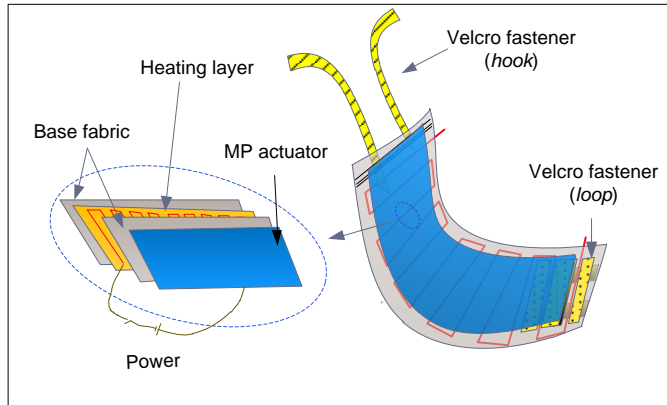


Measurement	Leg circumference			
	Small	Medium	Large	Extra large
Original Tube Size I	P_1	P_3	P_5	P_7

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4. Massage Effect



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Summary

Challenges

- ❖ ~~No Pressure Control~~
- ❖ ~~No Massage Effect~~
- ❖ ~~Donning Challenge~~
- ❖ ~~Problem of Size Selection~~

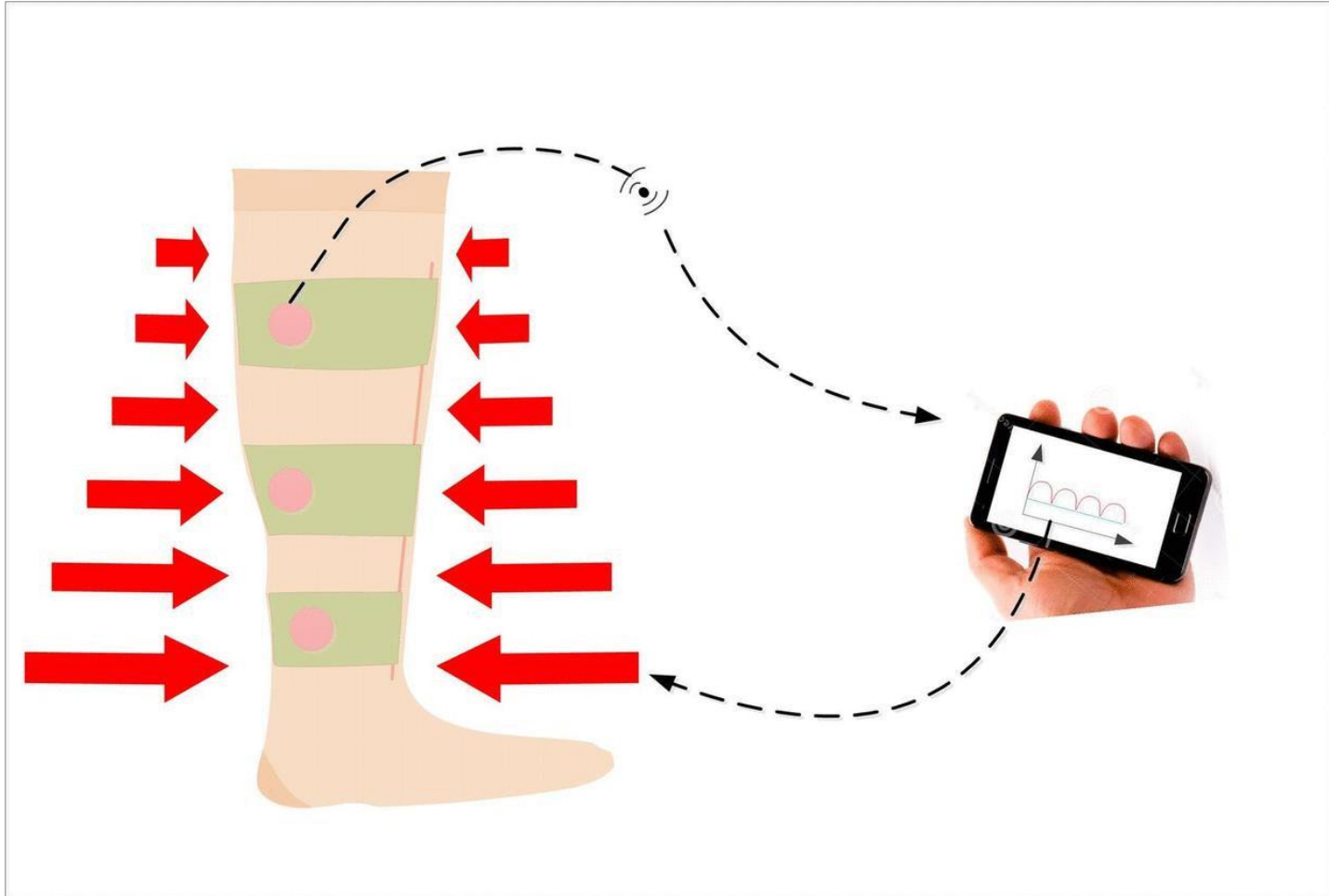


Smart Textile



Smart Textiles

Vision



Acknowledgments

Mentors – Collaborators



THANK YOU FOR YOUR TIME & PATIENCE

Questions, Comments, Concerns



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