

# MEMS Based Sensor for Blood Group Investigation

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**Introduction:** Antigens play vital role in determining the blood group. The antigens antibodies are combined specifically with each other. This interaction between them is called as Antigen-Antibody (Ag-Ab) interaction. These reactions form a basis for existence of different types of blood groups.

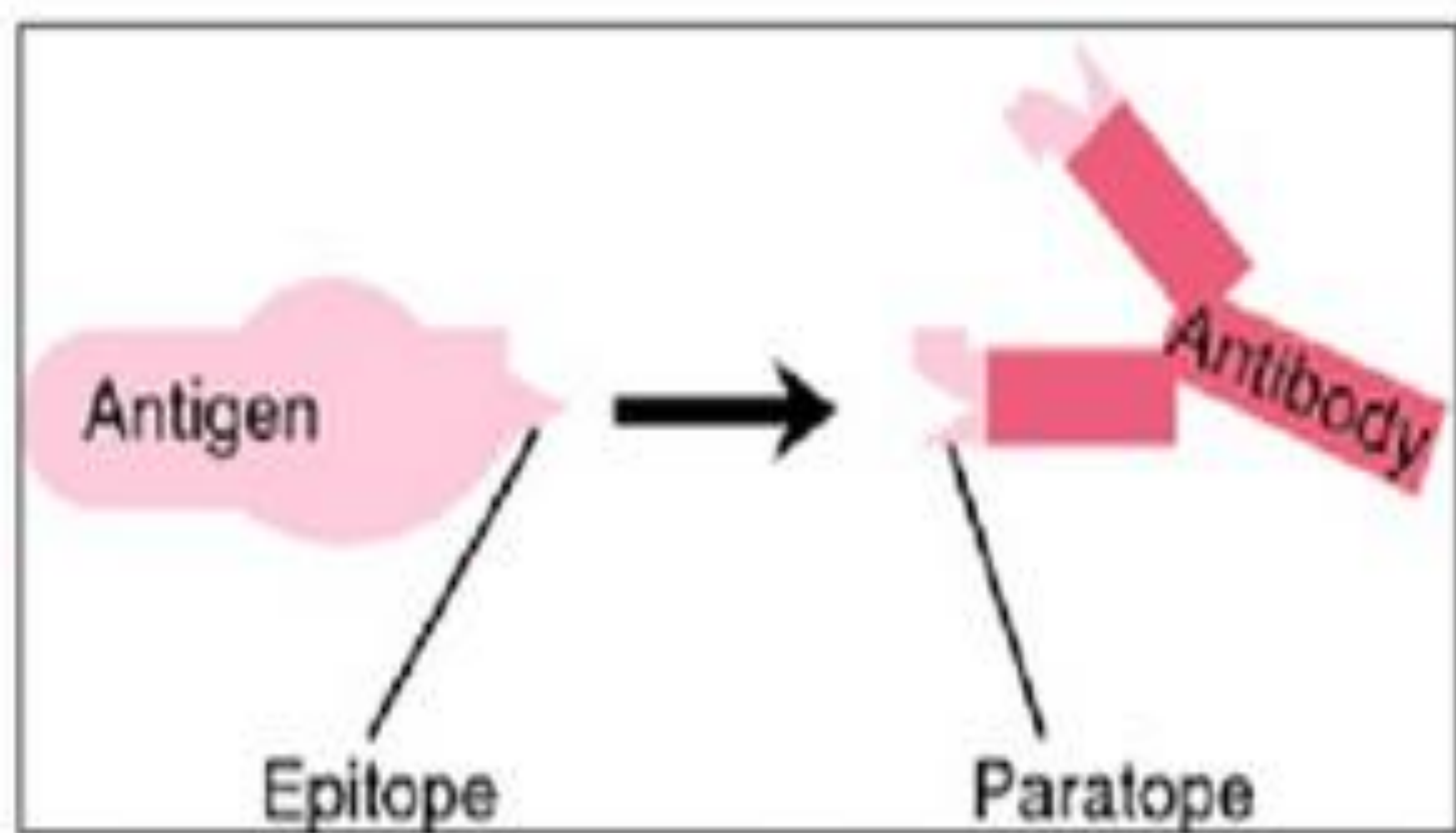


Figure.1 Binding site of Epitope and Paratope

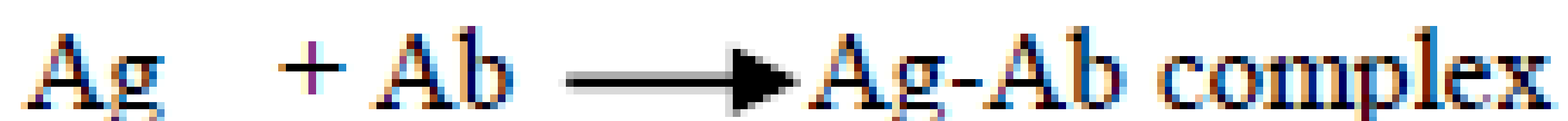


Table 1. showing stress variation against deflection in A-ve blood group

X (Stress)	Y(Stress)	Z(Stress)	Deflection
10.8	9.0	1.9	6.43
10.97	0.95	1.98	6.28
12.2	1.0	1.9	4.82
13.7	0.8	1.7	3.14
15.8	1.04	1.5	1.39

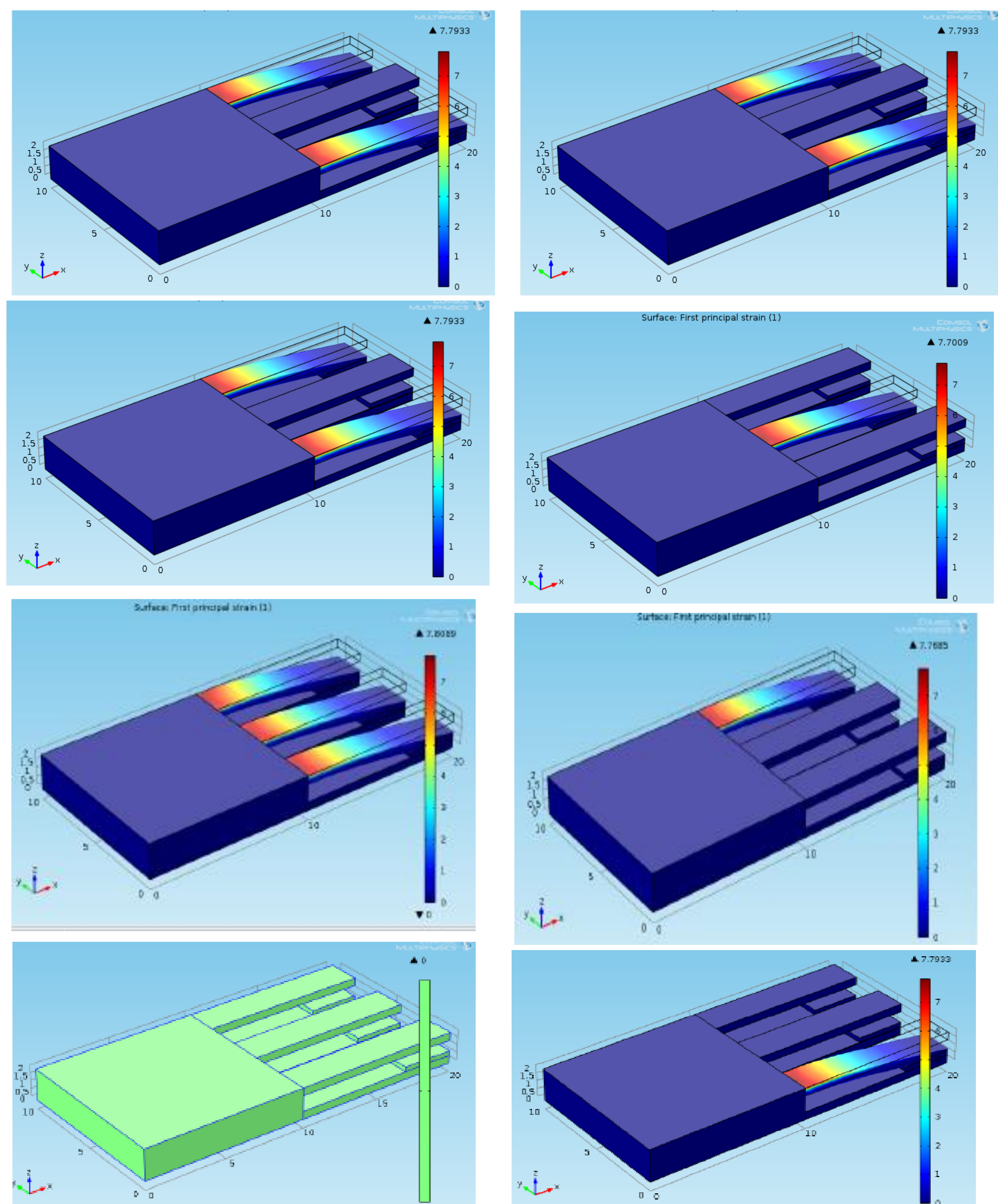


Figure 2. Responses of cantilever beams for various blood groups

## Results:

For applied stress in 3-D model of cantilever beam the corresponding variation in the deflection can be seen by referring the table 2. The deflection is inversely proportional to the applied stress.

## References:

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- [2] Ana Ferraz, Filomena soares, "A prototype for blood typing based on image processing", R & D centre, Algoritmi, University of Minho, Portugal.
- [3] Stephen A, Mackintosh, James I, Rodgers, Stephen P, Blythe, "Modeling an Enzyme Based Electrochemical Blood Glucose Sensor", Lifescan Scotland Ltd, Inverness, IV2 3ED, Scotland.[]