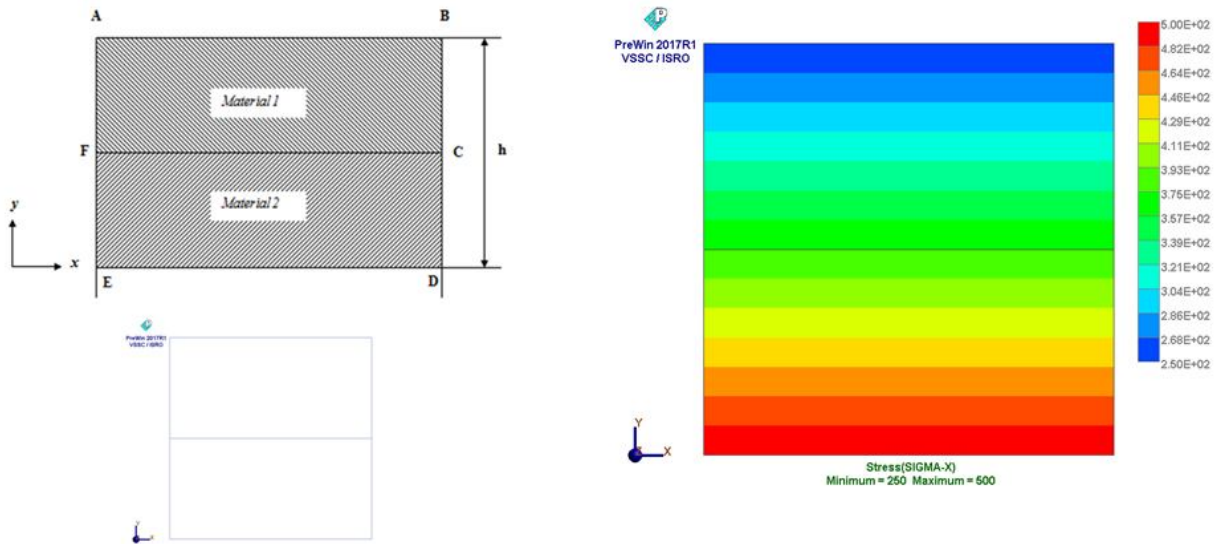


Static analysis of bimetallic strip



		Case 1	Case 2	Case 3
Loading	:	Uniform displacement of edge BD in the x direction of 0.01 mm	A uniform displacement of Edge BD in the x direction of 0.01 mm	A uniform temperature rise of 3 K
Boundary condition	:	Along edge AE, $U_x=0$, At F, $U_y=0$	Along edge AE, $U_x=0$; At point F, $U_y=0$	At point F, $U_x=U_y=0$; At point C, $U_y=0$
Geometric property	:	Thickness = 1 mm, depth = 4 mm, length= 4 mm		
Material property	:	For material 1($E = 100 \text{ GPa}$, $\nu = 0$, $\alpha = 10^{-5} /K$), For material 2($E = 200 \text{ GPa}$, $\nu = 0$, $\alpha = 2 \times 10^{-5} /K$)		
Element types	:	4-node plane stress elements	8-node plane stress elements	4-node plane stress elements
Finite element statistics	:	Number of elements	Number of nodes	Degrees of freedom
		2	6	5(Case 1), 15(Case 2), 9(Case 3)

	Axial Stress, σ_{xx} (MPa)					
	Case 1		Case 2		Case 3	
	Material 1	Material 2	Material 1	Material 2	Material 1	Material 2
NAFEMS	250	500	250	500	0 along AB	0 along DE
FEAST^{SMT}	250	500	250	500	0 along AB	0 along DE
NASTRAN[®]	250	500	250	500	0 along AB	0 along DE