



**Figure 8.3-1.** (A) Finite-element model for thermostructural analysis of the ARIES-I first wall (red is CVD SiC; black is SiC composite); (B) Temperature contours ( $^{\circ}\text{C}$ ) in the SiC-composite first wall for a surface heat flux of  $0.55 \text{ MW/m}^2$  at beginning of life; and (C) Combined thermal-plus-pressure stress contours (MPa) in the SiC-composite first-wall section for a surface heat flux of  $0.55 \text{ MW/m}^2$  and coolant pressure of  $10 \text{ MPa}$  at beginning of life. (A 2-mm-thick CVD sacrificial sputtering layer faces the plasma.)