**Microstructure and mechanical properties of near eutectic Nb-18.7Si alloy with Ti, Zr additions**

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The near eutectic Nb-Si alloys are promising refractory alloys for high temperature applications. In the current study the microstructure of Nb-18.7Si-10Zr (A5) and Nb-18.7Si-10Ti-5Zr (A6) is examined. The effect of Zr, Ti additions on the compression and fracture toughness behavior of the cast binary alloy is evaluated at room temperature. Both the alloys consisted of Nbss and α˗Nb5Si3 phases in cast alloys with minor amount of γ˗ Nb5Si3 phase. A5 and A6 alloys showed the strength, of 1854±100MPa and 1818±80MPa respectively. The fracture strain is 9.37±0.47% and 8.14±0.45% respectively for A5 and A6 alloys. The fracture toughness of 10.2±0.2MPam1/2and 10±0.3MPam1/2isobtained for A5 and A6 alloys respectively. The drastic increase in the strength and toughness in these alloys is attributed to the formation of α˗Nb5Si3 phase and increase in the volume fraction and coarsening of Nbss phase respectively.