Results of All Performed ATF Irradiation Simulations

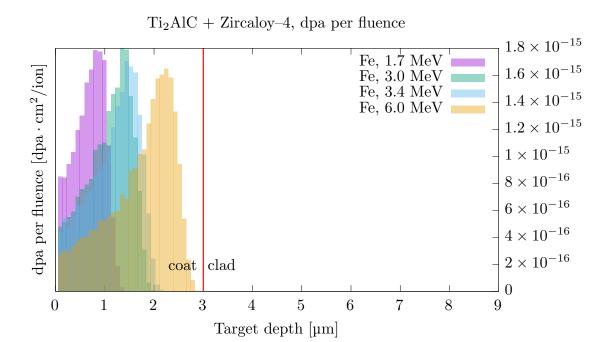


Figure 1: DPA production by Fe ion irradiation of Ti₂AlC coating deposited on Zircaloy-4 cladding.

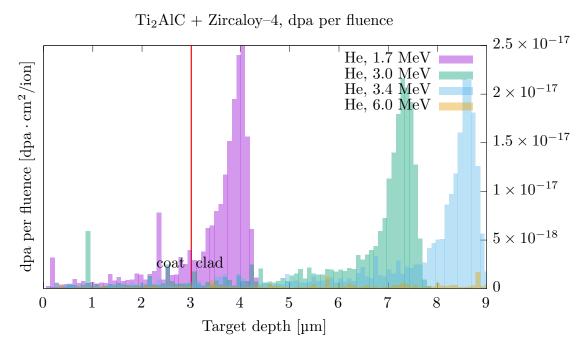


Figure 2: DPA production by He ion irradiation of Ti_2AlC coating deposited on Zircaloy-4 cladding.

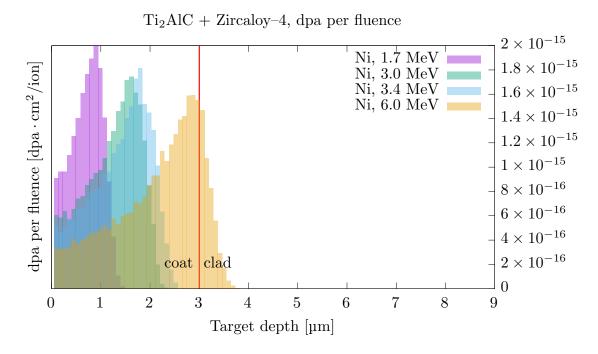


Figure 3: DPA production by Ni ion irradiation of ${\rm Ti_2AlC}$ coating deposited on Zircaloy–4 cladding.

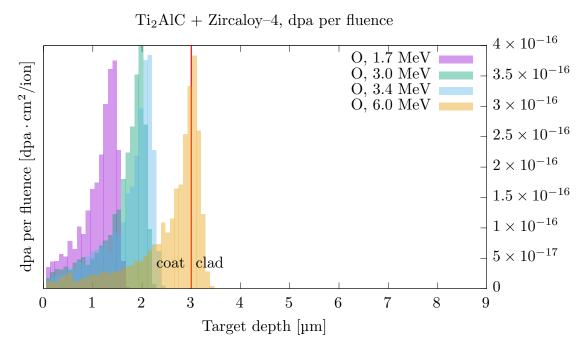


Figure 4: DPA production by O ion irradiation of Ti_2AlC coating deposited on Zircaloy-4 cladding.

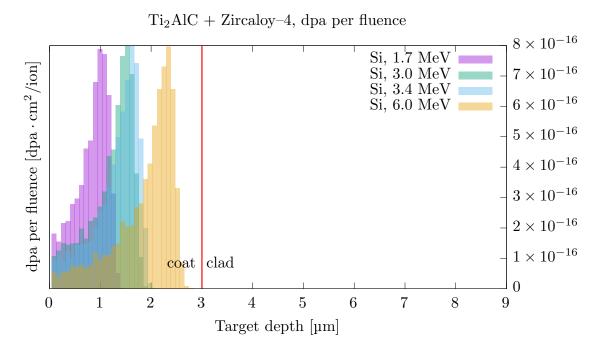


Figure 5: DPA production by Si ion irradiation of ${\rm Ti_2AlC}$ coating deposited on Zircaloy-4 cladding.

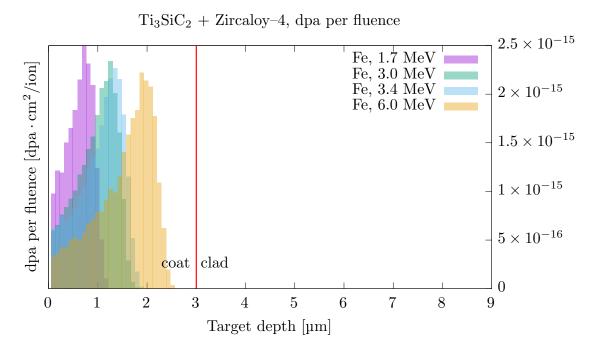


Figure 6: DPA production by Fe ion irradiation of Ti_3SiC_2 coating deposited on Zircaloy-4 cladding.

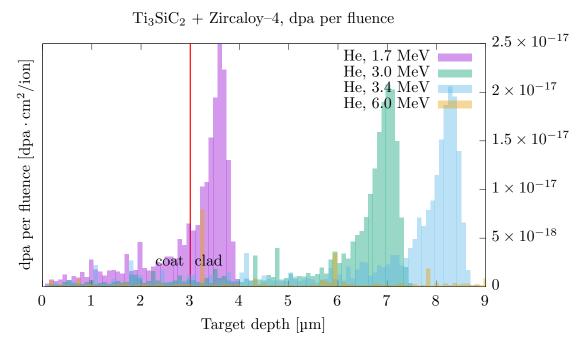


Figure 7: DPA production by He ion irradiation of ${\rm Ti_3SiC_2}$ coating deposited on Zircaloy–4 cladding.

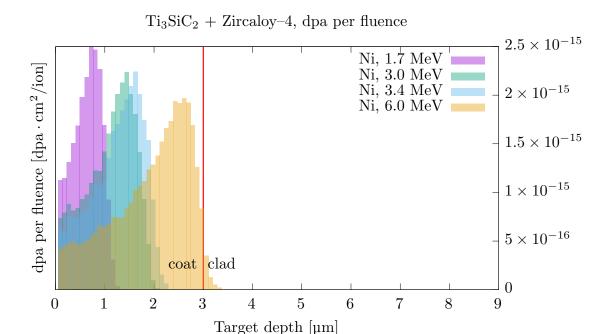


Figure 8: DPA production by Ni ion irradiation of Ti_3SiC_2 coating deposited on Zircaloy-4 cladding.

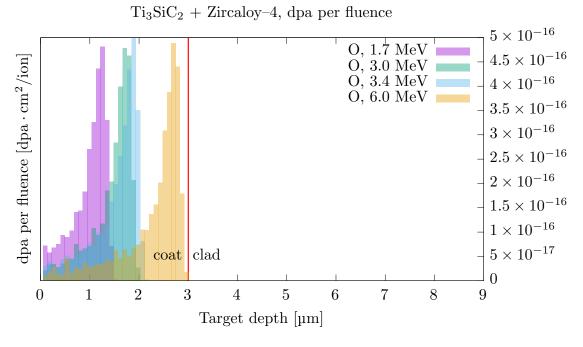


Figure 9: DPA production by O ion irradiation of Ti₃SiC₂ coating deposited on Zircaloy–4 cladding.

$Ti_3SiC_2 + Zircaloy-4$, dpa per fluence 1.2×10^{-15} Si, 1.7 MeV dpa per fluence [dpa \cdot cm²/ion] Si, 3.0 MeV Si, 3.4 MeV Si, 6.0 MeV 1×10^{-15} 8×10^{-16} 6×10^{-16} 4×10^{-16} 2×10^{-16} clad coat 0 01 2 3 4 5 6 7 8 9

Figure 10: DPA production by Si ion irradiation of Ti₃SiC₂ coating deposited on Zircaloy–4 cladding.

Target depth [µm]

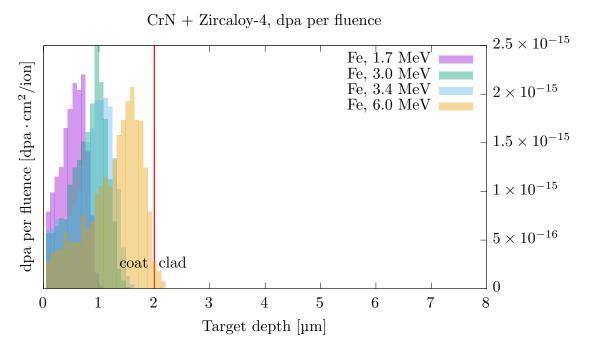


Figure 11: DPA production by Fe ion irradiation of CrN coating deposited on Zircaloy-4 cladding.

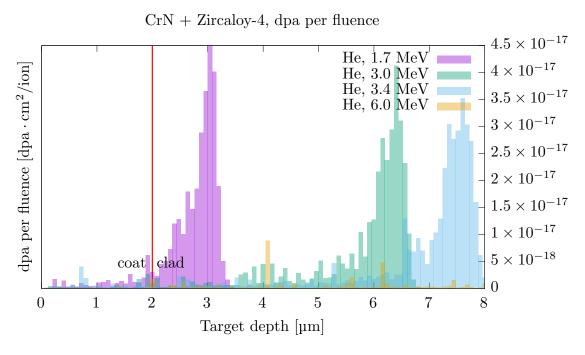


Figure 12: DPA production by He ion irradiation of CrN coating deposited on Zircaloy-4 cladding.

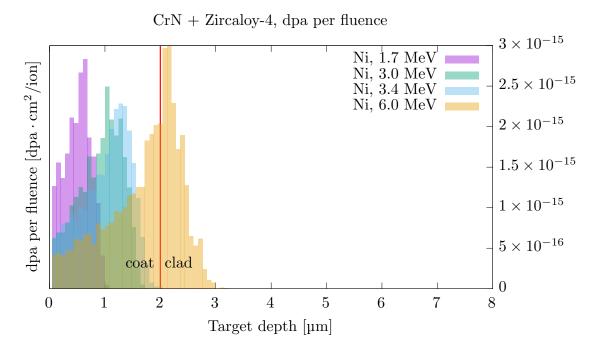


Figure 13: DPA production by Ni ion irradiation of CrN coating deposited on Zircaloy-4 cladding.

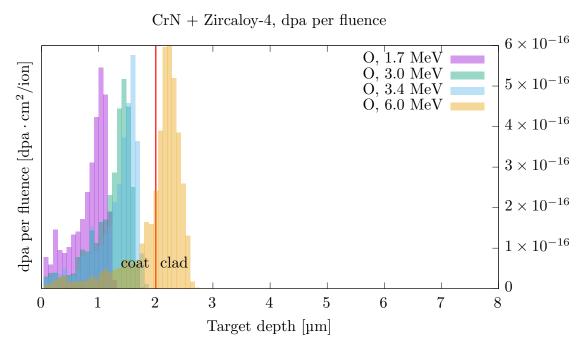


Figure 14: DPA production by O ion irradiation of CrN coating deposited on Zircaloy-4 cladding.

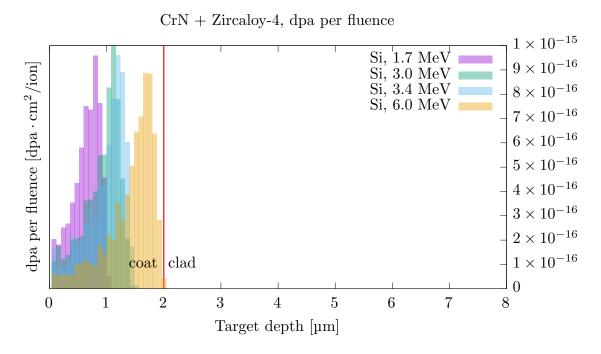


Figure 15: DPA production by Si ion irradiation of CrN coating deposited on Zircaloy-4 cladding.

Figure 16: DPA production by Fe ion irradiation of Cr₂N coating deposited on E110M cladding.

Target depth [µm]

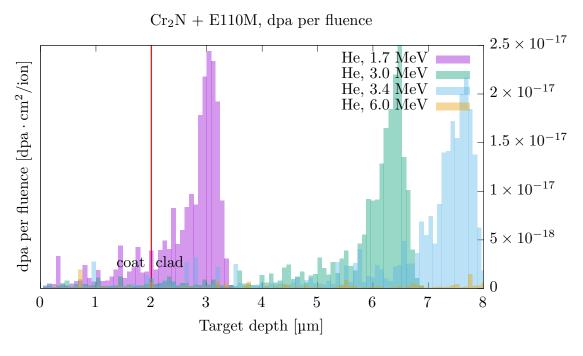


Figure 17: DPA production by He ion irradiation of Cr₂N coating deposited on E110M cladding.

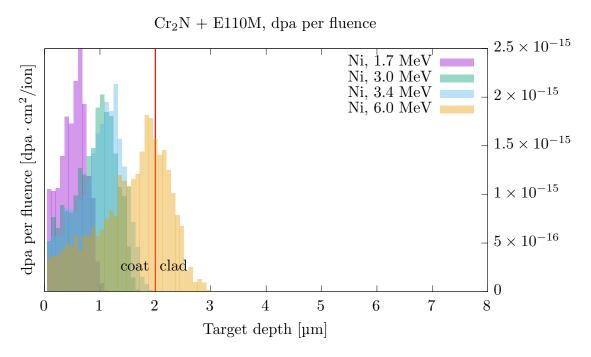


Figure 18: DPA production by Ni ion irradiation of Cr₂N coating deposited on E110M cladding.

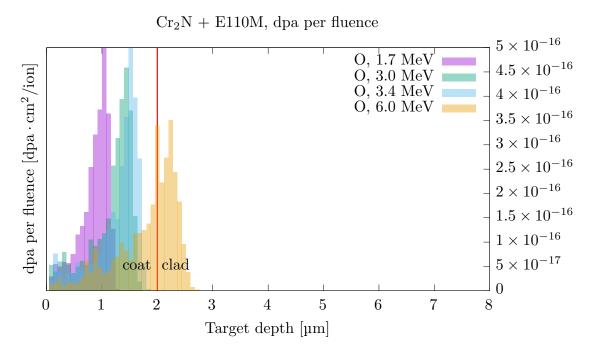


Figure 19: DPA production by O ion irradiation of Cr_2N coating deposited on E110M cladding.

$Cr_2N + E110M$, dpa per fluence

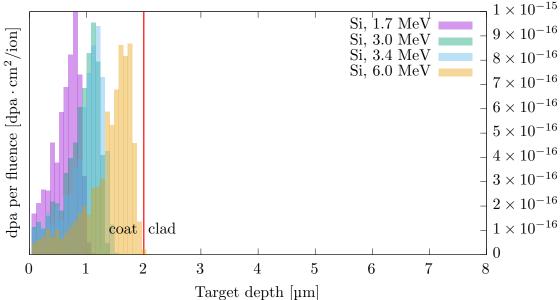


Figure 20: DPA production by Si ion irradiation of Cr₂N coating deposited on E110M cladding.

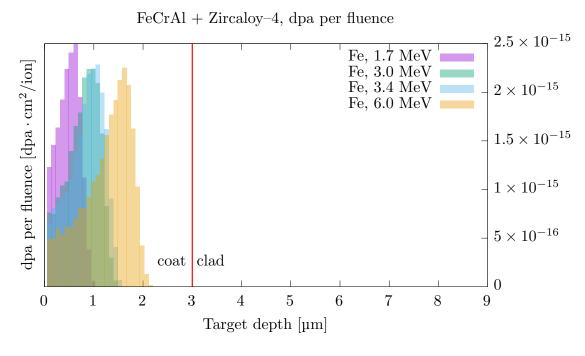


Figure 21: DPA production by Fe ion irradiation of FeCrAl coating deposited on Zircaloy-4 cladding.

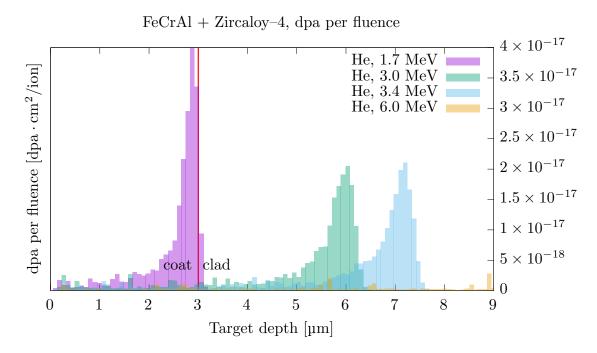


Figure 22: DPA production by He ion irradiation of FeCrAl coating deposited on Zircaloy–4 cladding.

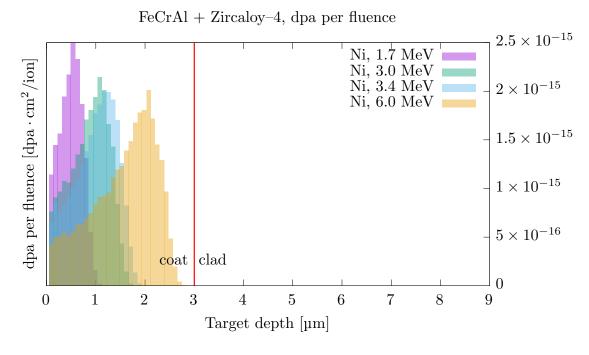


Figure 23: DPA production by Ni ion irradiation of FeCrAl coating deposited on Zircaloy–4 cladding.

FeCrAl + Zircaloy-4, dpa per fluence

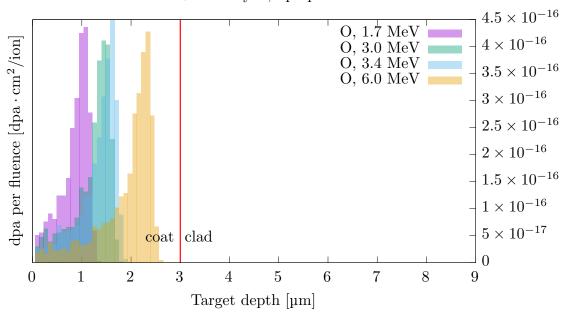


Figure 24: DPA production by O ion irradiation of FeCrAl coating deposited on Zircaloy-4 cladding.

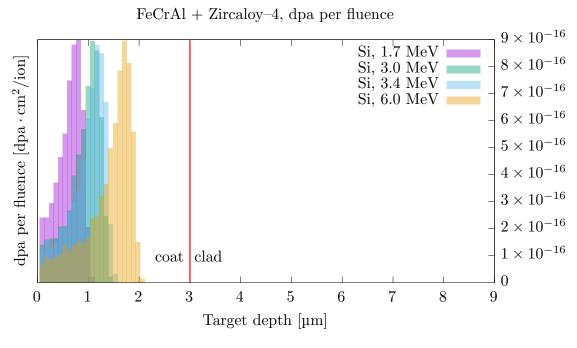


Figure 25: DPA production by Si ion irradiation of FeCrAl coating deposited on Zircaloy–4 cladding.

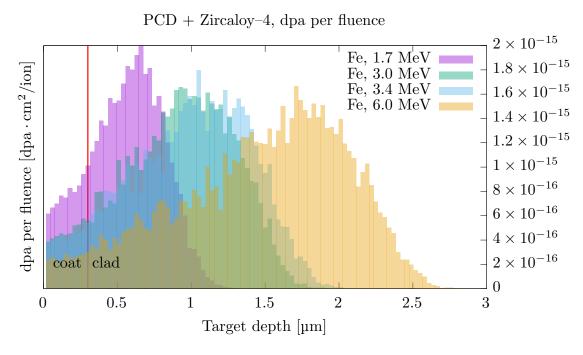
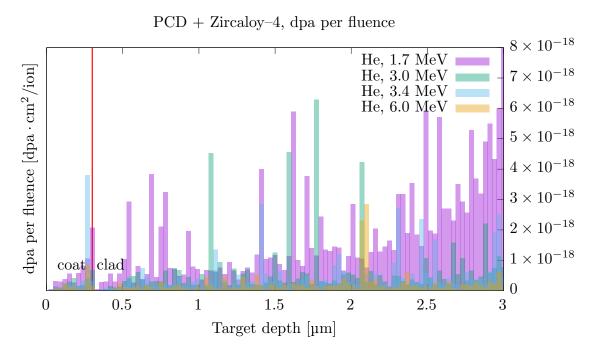


Figure 26: DPA production by Fe ion irradiation of PCD coating deposited on Zircaloy-4 cladding.



 $Figure\ 27:\ DPA\ production\ by\ He\ ion\ irradiation\ of\ PCD\ coating\ deposited\ on\ Zircaloy-4\ cladding.$

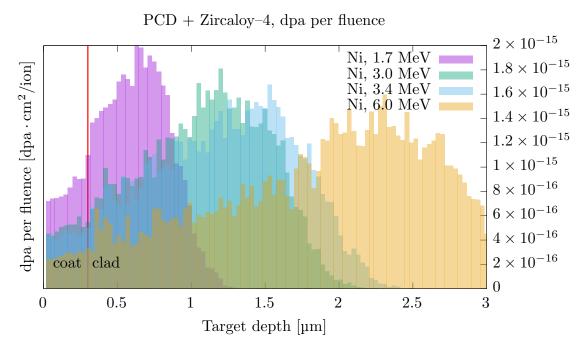


Figure 28: DPA production by Ni ion irradiation of PCD coating deposited on Zircaloy-4 cladding.

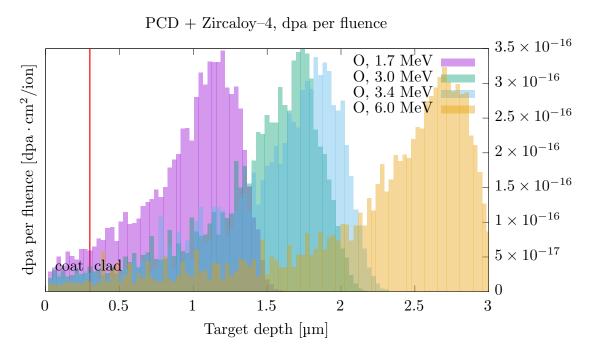


Figure 29: DPA production by O ion irradiation of PCD coating deposited on Zircaloy–4 cladding.

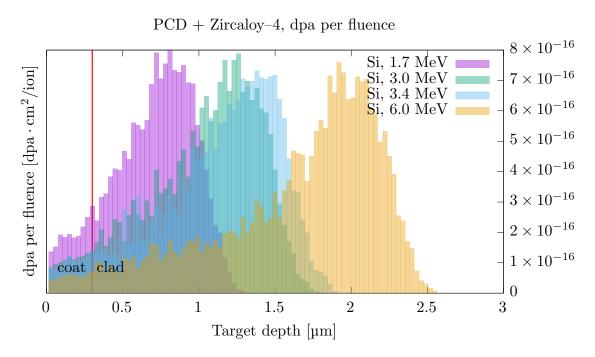


Figure 30: DPA production by Si ion irradiation of PCD coating deposited on Zircaloy-4 cladding.

$ZrSi_2 + M5$, dpa per fluence 3×10^{-15} Fe, 1.7 MeV Fe, 3.0 MeV Fe, 3.4 MeV dpa per fluence [dpa \cdot cm²/ion] 2.5×10^{-15} Fe, 6.0 MeV 2×10^{-15} 1.5×10^{-15} 1×10^{-15} 5×10^{-16} coat clad 0 0 3 0.51 1.5 2 2.5

Figure 31: DPA production by Fe ion irradiation of ZrSi₂ coating deposited on M5 cladding.

Target depth [µm]

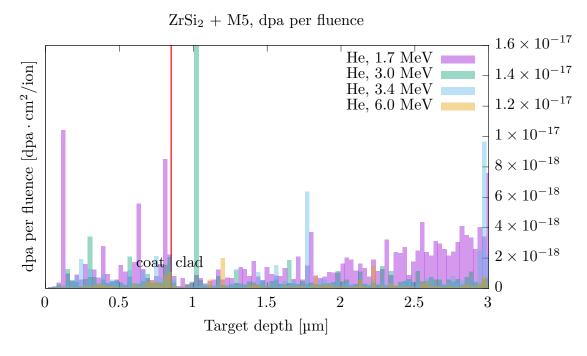


Figure 32: DPA production by He ion irradiation of ZrSi₂ coating deposited on M5 cladding.

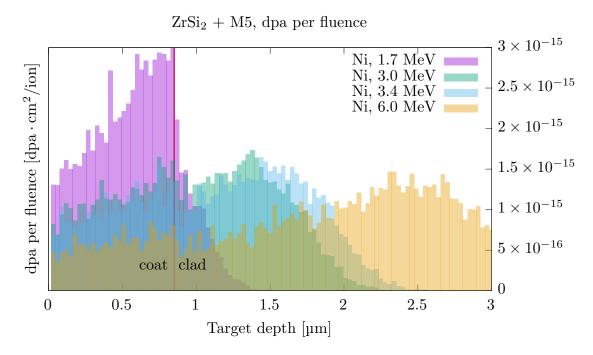


Figure 33: DPA production by Ni ion irradiation of ZrSi₂ coating deposited on M5 cladding.

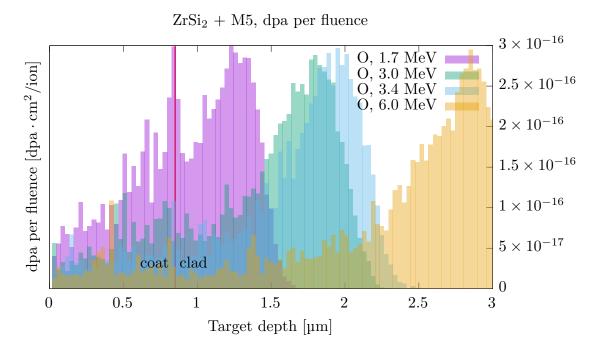


Figure 34: DPA production by O ion irradiation of $ZrSi_2$ coating deposited on M5 cladding.

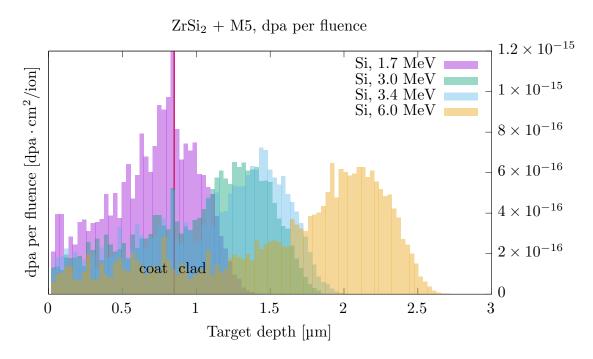


Figure 35: DPA production by Si ion irradiation of ${\rm ZrSi}_2$ coating deposited on M5 cladding.