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### Investigation of properties of carbon diamond-like films

We've investigated an influence of thin carbon diamond-like coating on corrosion resistance of zirconium films. Zr films with thickness of about 20 nm and various thickness of protective diamond-like coating have been prepared and studied in situ by UPS, EELS and Auger Electron Spectroscopy to characterize chemical state of zirconium atoms on the surface. It was shown that the protective carbon film with thickness of 1 nm almost completely protects the metal film from corrosion. These physical results and possibilities for their practical applications will be discussed.



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