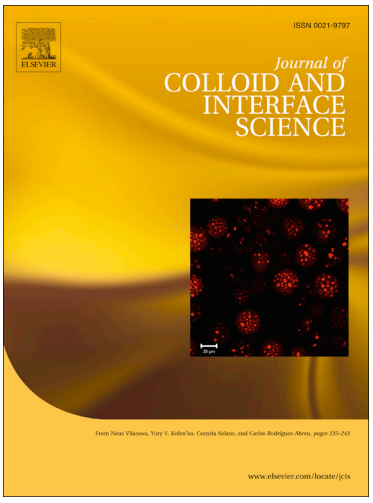

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Enhanced catalytic activity of the nanostructured Co–W–B film catalysts for hydrogen evolution from the hydrolysis of ammonia borane

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ABSTRACT: In this work, nanostructured Co–W–B films are successfully synthesized on the foam sponge by electroless plating method and employed as the catalysts with enhanced catalytic activity towards hydrogen evolution from the hydrolysis of ammonia borane (NH_3BH_3, AB) at room temperature. The particle size of the as-prepared Co–W–B film catalysts is varied by adjusting the depositional pH value to identify the most suitable particle size for hydrogen evolution of AB hydrolysis. The Co–W–B film catalyst with the particle size of about 67.3 nm shows the highest catalytic activity and can reach a hydrogen generation rate of 3327.7 mL min^{-1} g_{cat}^{-1} at 298 K. The