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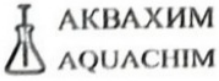

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Topic	C – Thin films, superlayers, quantum dots and nanowires. C1-C16
C1	Mikhail Leonov, I.D. Rukhlenko, Yu. K. Gun'ko, A.V. Fedorov, A.V. Baranov TRANSIENT PHOTOLUMINESCENCE FROM SEMICONDUCTOR NANOPLATES m.yu.leonov@gmail.com
C2	Sasho Stojkovikj, Violeta Koleva, Metodija Najdoski CHEMICAL DEPOSITION OF NANO-SIZED ELECTROCHROMIC THIN FILMS OF Na0.33V2O5·H2O XEROGELS sasostojkovik@yahoo.com
C3	Sasho Stojkovikj, Violeta Koleva, Metodija Najdoski INFLUENCE OF THERMAL TREATMENT ON THE ELECTROCHROMIC PROPERTIES OF SODIUM INTERCALATED VANADIUM(V) OXIDE XEROGEL THIN FILMS sasostojkovik@yahoo.com
C4	Aksu Samet, Violeta Koleva, Metodija Najdoski A NEW CHEMICAL BATH DEPOSITION METHOD FOR PREPARATION OF ELECTROCHROMIC NANO-SIZED AMMONIUM INTERCALATED VANADIUM(V) OXIDE XEROGELS aksusamet09@gmail.com
C5	Aksu Samet, Violeta Koleva, Julijana Velevska, Metodija Najdoski EFFECT OF ELECTROLYTE ON THE ELECTROCHROMISM OF NANOSTRUCTURED THIN FILMS OF AMMONIUM INTERCALATED VANADIUM(V) OXIDE XEROGELS aksusamet09@gmail.com
C6	T. Ivanova, A. Harizanova, Anna Petrova Morphological and optical investigation of sol-gel ZnO films ani@phys.bas.bg
C7	A. Bankova, S. Andreev, K. Raykov, M. Mitov, V. Videkov, B.Tzaneva, E. Dimitrova Growth of thin films of nanostructured oxide on dielectric base

INFLUENCE OF THERMAL TREATMENT ON THE ELECTROCHROMIC PROPERTIES OF SODIUM INTERCALATED VANADIUM(V) OXIDE XEROGEL THIN FILMS

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Vanadium(V) oxide xerogels are promising materials for application in different electrochromic devices. The present contribution is focused on the effect of thermal annealing at 250 and 400 °C on the electrochromic properties of as-deposited $Na_{0.33}V_2O_5 \cdot H_2O$ thin films. The structure and morphology of the annealed films is examined by XRD, IR spectroscopy and SEM. The annealing at 250 °C produces xerogel with composition of $Na_{0.33}V_2O_5 \cdot 0.3H_2O$ exhibiting an inter-layered distance not significantly changed in comparison with the as-deposited xerogel. The total dehydration at 375 °C results in the transformation of the layered structure into a tunnel structure of monoclinic NaV_6O_{15}. The electrochemical and optical properties of the annealed films are studied in $LiClO_4$ in propylene carbonate as an electrolyte. The cyclic voltammetry measurements show that the lithium ions are reversibly intercalated/deintercalated during the cathodic and anodic potential sweep which is accompanied with reversible colour transformations due to the redox reactions between V(V) and V(IV) sites. The partially dehydrated xerogel films exhibit better electrochromic activity (ΔT of 54 %) in comparison with the as-deposited film (ΔT of 37 %) and the annealed at 400 °C film (ΔT of 27 %).