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BOOKS

1. Metal Oxide Nanostructures and Their Applications Volume 1: ***“Growth and Properties of Metal Oxide Nanostructures”- Part-1***, Edited by **Ahmad Umar** and Yoon-bong Hahn

Publisher: American Scientific Publishers (www.aspbs.com), Los Angeles, USA

Website: www.aspbs.com/mona

2. Metal Oxide Nanostructures and Their Applications Volume 2: ***“Growth and Properties of Metal Oxide Nanostructures”- Part-2***, Edited by **Ahmad Umar** and Yoon-bong Hahn,

Publisher: American Scientific Publishers (www.aspbs.com), Los Angeles, USA

Website: www.aspbs.com/mona

3. Metal Oxide Nanostructures and Their Applications Volume 3: ***“Applications of Metal Oxide Nanostructures”- Part-1***, Edited by **Ahmad Umar** and Yoon-bong Hahn

Publisher: American Scientific Publishers (www.aspbs.com), Los Angeles, USA

Website: www.aspbs.com/mona

4. Metal Oxide Nanostructures and Their Applications Volume 4: ***“Applications of Metal Oxide Nanostructures”- Part-2***, Edited by **Ahmad Umar** and Yoon-bong Hahn,

Publisher: American Scientific Publishers (www.aspbs.com), Los Angeles, USA

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5. Metal Oxide Nanostructures and Their Applications Volume 5: ***“ZnO Nanostructures and Their Nanodevices Applications”***, Edited by **Ahmad Umar** and Yoon-Bong Hahn,

Publisher: American Scientific Publishers (www.aspbs.com), Los Angeles, USA

Website: www.aspbs.com/mona

PATENTS

[1] ZnO nanostructures based Chemical Sensors for Hydrazine Detection, **Korean patent pending** (Patent Application Number- 10-2008-0004141)

[2] Hydrazine Chemical Sensors based on ZnO nanostructures, **US patent pending** (Patent Application Number- 12/ 037,912)

[3] Synthesis of $\text{Li}_4\text{Ti}_5\text{O}_{12}$ anode powders for Li battery using titanate nanotube, **Korean Patent** (Patent Number- 2009-0007394)

Selected Book Chapters

- (1) **Ahmad Umar** and Yoon-Bong Hahn, "Nanostructures of Zinc oxide: synthesis, growth mechanism, properties and applications" "*Encyclopedia of Nanoscience and Nanotechnology, 2nd Edition*", Edited by Hari Singh Nalwa, American Scientific Publishers, USA (2009)
- (2) **Ahmad Umar** "Electrochemical Sensors Based on Metal Oxide Nanomaterials" "*Encyclopedia of Nanoscience and Nanotechnology, 2nd Edition*", Edited by Hari Singh Nalwa, American Scientific Publishers, USA (2009)
- (3) **Ahmad Umar**, "Copper oxide nanostructures: synthesis, properties and applications" "*Encyclopedia of Nanoscience and Nanotechnology, 2nd Edition*", Edited by Hari Singh Nalwa, American Scientific Publishers, USA (2009)
- (4) **Ahmad Umar** and Yoon-Bong Hahn, "Zinc oxide Nanostructures and their nanodevice

applications” “*Metal Oxide Nanostructures and Their Applications*”, Edited by Ahmad Umar and Y. B. Hahn, **Volume 5, Chapter 1, pages 1-111 (2009)**, American Scientific Publishers, USA.

(5) **Ahmad Umar**, M. Vaseem and Yoon-Bong Hahn, “Growth, properties and Applications of copper and nickel oxide and hydroxide nanostructures” “*Metal Oxide Nanostructures and Their Applications*”, Edited by Ahmad Umar and Y. B. Hahn, **Volume 2, Chapter 2, pages 1-39 (2009)**, American Scientific Publishers, USA

(6) M. Vaseem, **Ahmad Umar** and Yoon-Bong Hahn, “Zinc Oxide Nanoparticles: Growth, Properties and their Applications” “*Metal Oxide Nanostructures and Their Applications*”, Edited by Ahmad Umar and Y. B. Hahn, **Volume 5, Chapter 4, pages 1-36 (2009)**, American Scientific Publishers, USA.

(7) **Ahmad Umar**, “Electrochemical Sensors based on Zinc Oxide Nanostructures” “*Metal Oxide Nanostructures and Their Applications*”, Edited by Ahmad Umar and Y. B. Hahn, **Volume 5, Chapter 8, pages 1-34 (2009)**, American Scientific Publishers, USA

(8) **Ahmad Umar** “ZnO Nanostructures for Dye-Sensitized Solar Cells Applications” *Metal Oxide Nanostructures and Their Applications*”, Edited by Ahmad Umar and Y. B. Hahn, **Volume 5, Chapter 17, pages 1-22 (2009)**, American Scientific Publishers, USA

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(10) **Ahmad Umar**, “*Growth and properties of ultra-violet emitting aligned ZnO nanocones with hexagonal caps*”, **Journal of Nanoscience and Nanotechnology (In Press, 2009)**

- (11) Ahmad Umar, “*Editorial: Welcome to Science of Advanced Materials*” **Science of Advanced Materials**, **1**, 1–3 (2009)
- (12) Ahmad Umar, “*Synthesis of donuts-like SnO₂ structures composed of small SnO₂ nanocrystals on silicon substrate: Growth mechanism, structural and optical properties*” *Journal of Alloys and Compounds* (In Press, 2009, [doi:10.1016/j.jallcom.2009.06.100](https://doi.org/10.1016/j.jallcom.2009.06.100))
- (13) Ahmad Umar, “*High-Yield Synthesis and Properties of Symmetrical Comb-Like ZnO Nanostructures on Aluminum Foil Substrate*” *Journal of Nanoscience and Nanotechnology* (In Press, 2009)
- (14) Ahmad Umar, Caue Ribeiro, A. Al-Hajry, Yoshitake Masuda, Y. B. Hahn, “*Growth of highly c-axis oriented ZnO nanorods on ZnO/Glass substrate: Growth mechanism, Structural and Optical properties*” *The Journal of Physical Chemistry C* (In Press, 2009)
- (15) Ahmad Umar “*Dye-sensitized solar cell of comb-like ZnO nanostructures grown by thermal evaporation process*” *Nanoscale Research Letters* (In Press, 2009, DOI [10.1007/s11671-009-9353-3](https://doi.org/10.1007/s11671-009-9353-3))
- (16) Ahmad Umar, M. M. Rahman, and Y. B. Hahn, “*MgO polyhedral nanocages and nanocrystals based glucose biosensor*” *Electrochemistry Communications* **11**, 1353-1357 (2009)
- (17) Ahmad Umar, A. Al-Hajry, Y. B. Hahn and D. H. Kim “*Rapid Synthesis and Dye-Sensitized Solar Cell Applications of hexagonal-Shaped ZnO Nanorods*” *Electrochimica Acta* **54**, 5358-5362 (2009)
- (18) A. Al-Hajry and Ahmad Umar*, D. H. Kim, Y. B. Hahn “*Growth, properties and dye-sensitized solar cell applications of ZnO nanorods grown by low-temperature solution process*” *Superlattices and Microstructures* **45**, 529 (2009)
- (19) M. M. Rahman, Ahmad Umar*, and Kazuaki Sawada “*Development of Self-Assembled Monolayers of Single-Walled Carbon Nanotubes Assisted Cysteamine on Gold Electrodes*” *Advanced Science Letters* **2**, 28-34 (2009)
- (20) S. H. Kim, Ahmad Umar, Y. K. Park, J.-H. Kim, E. W. Lee, and Y. B. Hahn, “*Non-catalytic growth of high-aspect ratio Sb-doped ZnO nanowires by simple thermal*

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- (21) Yong Kyu Park, Ahmad Umar, E. W. Lee, D. M. Hong and Y. B. Hahn, “*Single ZnO nanobelt based Field Effect Transistors (FETs)*” J. Nanoscience and Nanotechnology 9, 5745-5751 (2009)
- (22) Ahmad Umar, M. M. Rahman, A. Al-Hajry and Y. B. Hahn, “*Highly-sensitive cholesterol biosensor based on well-crystallized flower-shaped ZnO nanostructures*” Talanta 78,284 (2009) **(AMONG TOP 25 HOTTEST ARTICLES)**
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- (27) Ahmad Umar, S. H. Kim, M. Vaseem, J-H. Kim, Y-B. Hahn “*Structural, Optical and Field Emission Properties of ZnO Nanowires Grown by Non-Catalytic Thermal Evaporation Process*” International Journal of Nanomanufacturing (Accepted, In Press, 2009)
- (28) M. Al-Assiri, H. Al-Gharni, A. Alola, A. Al-Hajry, F. El-Tantawy, M. Bououdina, S. Al-Heniti, Ahmad Umar, M. Vaseem and Y. B. Hahn, “*Synthesis and characterization of ZnO structures containing the nanoscale regime*” International Journal Nano and Biomaterials (Accepted, In Press, 2009)
- (29) Ahmad Umar, Y. K. Park, A. Al-Hajry Y-B. Hahn, “*Complex Nanostructures of ZnO: Growth and Properties*”, International Journal of Nanomanufacturing (Accepted, In Press, 2008)

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- (35) M. Vaseem, Ahmad Umar, Y. B. Hahn, D. H. Kim, K. S. Lee, J. S. Jang and J. S. Lee, “*Flower-Shaped CuO Nanostructures: Structural, Photocatalytic and XANES Studies*” *Catalysis Communications* 10, 11-16, 2008
- (36) Y. K. Park, Ahmad Umar, S. H. Kim, J-H. Kim, E. W. Lee, M. Vaseem and Y-B. Hahn “*Comparison between the electrical properties of ZnO nanowires based field effect transistors fabricated by back- and top-gate approaches*” *J. Nanoscience and Nanotechnology* 8, 6010-6016 (2008)
- (37) Ahmad Umar and Yoon-Bong Hahn, “*Ultraviolet-Emitting ZnO Nanostructures on Steel Alloy Substrate: Growth and Properties*”, *Crystal Growth and Design* 8 (8), 2741-2747 (2008)
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- (40) Ahmad Umar, S. H. Kim, B. Karunagaran, E. K. Suh, and Y. B. Hahn, “*Growth and optical properties of aligned hexagonal ZnO nanoprisms on silicon substrate by non-catalytic thermal evaporation*” *Inorganic Chemistry* 47 (10), 4088-4094 (2008)
- (41) Ahmad Umar, S. H. Kim, Hansung Lee, Naesung Lee, Y. B. Hahn, “*Optical and field emission properties of single-crystalline aligned ZnO nanorods grown on aluminum substrate*”, *J. Phys. D: App. Phys.* 41, 065412 (2008)
- (42) Mohammad Vaseem, Ahmad Umar, Sang Hoon Kim and Yoon Bong Hahn, “*Low-temperature synthesis of flower-shaped CuO nanostructures by solution process: formation mechanism and structural properties*” *J. Physical Chemistry C* 112 (15), 5729-5735 (2008)
- (43) Ahmad Umar and Yoon Bong Hahn, “*Large-quantity synthesis of ZnO hollow objects by thermal evaporation: growth mechanism, structural and optical properties*”, *Applied Surface Science* 254, 3339-3346 (2008)
- (44) Seung-Yong Lee, Ahmad Umar, Duk-II Suh, Ji-Eun Park, Yoon-Bong Hahn and Sang-Kwon Lee, “*Synthesis of ZnO Nanowires and their Subsequent Use in High-Current Field-Effect Transistors Formed by Dielectrophoresis Alignment*” *Physica E* 40, 866-872 (2008)
- (45) A. Umar, M. M. Rahman, S. H. Kim and Y. B. Hahn, “*ZnO nanonails based chemical sensor for hydrazine detection*” *Chemical Communications*, 166–168 (2008) (COVER IMAGE)
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- (48) Ahmad Umar, S. H. Kim and Yoon Bong Hahn, *“Formation of hierarchical ZnO nanostructures “nanocombs”: Growth mechanism, structural and optical properties”* Current Applied Physics, 8 (6), 793 (2008)
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- (50) M. Vaseem, Ahmad Umar, S. H. Kim, A. Al-Hajry and Y. B. Hahn, *“Growth and structural properties of urchin-like CuO structures composed of thin CuO nanosheets prepared by simple solution process”* Materials Letters 62, 1659- 1662 (2008)
- (51) Ahmad Umar, S. H. Kim, J. H. Kim and Yoon Bong Hahn, *“Structural and optical properties of ZnO nanostructures grown on silicon substrate by thermal evaporation process”* Materials Letters, 62,167-171 (2008)
- (52) A. Umar, S.H. Kim, J.H. Kim, Y.K. Park and Y.B. Hahn, *“Fabrication of electrochemical bio- sensors for the detection of glucose and hydrazine using ZnO nanonails grown by the thermal evaporation process”*, Technical Proceedings of the 2007 NSTI Nanotechnology Conference and Trade Show, Volume 1, 332-335 (2007)
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- (56) Ahmad Umar, S. H. Kim, J. H. Kim, Y. K. Park, and Y. B. Hahn, *“Low-Temperature Growth of Flower-Shaped UV-Emitting ZnO Nanostructures on Steel Alloy by Thermal Evaporation* Journal of Nanoscience and Nanotechnology 7, 4421–4427 (2007) (COVER IMAGE)

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- (73) A. Umar, S. Lee, Y. S. Lee, K. S. Nahm and Y. B. Hahn, "Star-shaped ZnO nanostructures on silicon by cyclic feeding chemical vapor deposition", *Journal of Crystal Growth* 277, 479 (2005).

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-**Ahmad Umar**, A. Al-Hajry, S. G. Ansari, Y. B. Hahn, "Optical and Field Emission Properties of ZnO nanostructures grown by non-catalytic thermal evaporation process", International Conference on Materials for Advanced Technologies, and International Union of Materials Research Societies- International Conference in Asia, 2009 (ICMAT & IUMRS-ICA 2009) Singapore, June 28-July3, 2009

-Mohammad Vaseem, **Ahmad Umar**, Sang Hoon Kim, Yoon-Bong Hahn, "Highly Efficient Cholesterol Biosensor Based on Low-Temperature Synthesized ZnO Nanoparticles" 2009 KICChE Spring Meeting Apr. 22 (Wed.) ~ 24 (Fri.), Kimdaejung Convention Center, Kwangju, South Korea

- Mohammad Vaseem, **Ahmad Umar**, Sang Hoon Kim and Yoon-Bong Hahn, "Flower-Shaped CuO Nanostructures Grown in Solution: Structural, Photocatalytic and XANES Studies" International Conference on Materials for Advanced Technologies, and International Union of Materials Research Societies- International Conference in Asia, 2009 (ICMAT & IUMRS-ICA 2009) Singapore, June 28-July 3, 2009
- Ahmad Umar**, A. Al-Hajry, S. G. Ansari, Y. B. Hahn, "Fabrication of Chemical and Biosensors based on ZnO nanostructures by Electrochemical Principle", International Conference on Materials for Advanced Technologies, and International Union of Materials Research Societies- International Conference in Asia, 2009 (ICMAT & IUMRS-ICA 2009) Singapore, June 28-July3, 2009
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- Ahmad Umar**, A. Al-Hajry, S. H. Kim, S. G. Ansari and Y. B. Hahn, "Growth and properties of complex ZnO nanostructures" The International Conference for Nanotechnology Industries, King Abdullah Institute for Nanotechnology, King Saud University, April 5-7, **2009**, Riyadh, Kingdom of Saudi Arabia
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- Ahmad Umar** and Y. B. Hahn, "Metal Oxide Nanostructures based chemical and biosensors", IUMRS-ICA, December 9-13, **2008**, Nagoya Congress Center, Nagoya, JAPAN.

- Ahmad Umar**, E. W. Lee, M. Vaseem, Y. K. Park, J.-H. Kim, D. M. Hong, and Y. B. Hahn, “Growth, properties and applications of doped and undoped complex ZnO nanostructures”, IUMRS-ICA, December 9-13, **2008**, Nagoya Congress Center, Nagoya, JAPAN.
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- Yong Kyu Park, **Ahmad Umar**, E. W. Lee, S. H. Kim, and Y. B. Hahn, “ZnO nanowires based field effect transistors” **2008** International Conference of Nanoscience and Nanotechnology (GJ-NST2007), Chonnam National University, Gwangju, South Korea, November 6-7, **2007**.
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-**Ahmad Umar**, S. H. Kim, Y. K. Park and Y. B. Hahn, "Structural and optical properties of ultraviolet-emitting ZnO nanostructures grown on steel alloy substrates by thermal evaporation" E-MRS-2008 Spring meeting, Strasbourg, France, May 26th - May 30th, 2008

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