

CURRICULUM VITAE

NAME: MAHAMMOUD SAYED ABD EL-SADEK

NATIONALITY

Egyptian

DATE OF BIRTH

8/9/1978

PLACE OF BIRTH

El- Edesat Qebly, Luxor, Egypt

MARITAL STATUS

Married

CURRENT EMPLOYMENT

Lecturer

AND POSTAL ADDRESS

Nanomaterial Laboratory

Physics Department,

Faculty of Science,

South Valley University,

Qena-83523, Egypt

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LANGUAGES

Arabic (Mother Language) and English

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ACADEMIC DEGREES

- ❖ **Ph.D., (December 2009)** in physics, titled “**Synthesis and Characterization of CdTe and CdTe-related (Core-Shell) Nanocrystals**” from Crystal Growth Centre, Anna university Chennai, Chennai-600025, Tamil Nadu-India.
- ❖ **Master Degree (December 2004)** in physics, titled “**Crystal Growth and Study of Some Physical Properties of Bi₂Te₃ and Bi₂S₃ Single Crystals**” from Physics Department, Faculty of Science, South Valley University, Qena-Egypt.
- ❖ **B.Sc., Physics (July 1999)** with grade very good, Physics Department, Faculty of Science, South Valley University, Qena-Egypt.

PREVIOUS AND CURRENT PROFESSIONAL POSITIONS

1. Postdoctoral Fellow, Department of Chemical Physics, Lund University, P.O. Box 124, SE-22100 Lund, Sweden., From August 2010 Till March 2011.
2. Lecturer of Solid State Physics, Physics Department, Faculty of Science, South Valley University, Qena-Egypt., From May 2010 Till Now.
3. Research Scholar, Crystal Growth Centre, Anna University, Chennai-25, Tamil Nadu-India., From Jan. 2006 Till Dec. 2009.
4. Assistant Lecturer, Physics Department, Faculty of Science, South Valley University, Qena-Egypt., From Dec. 2004 Till April 2010.
5. Demonstrator, Physics Department, Faculty of Science, South Valley University, Qena-Egypt., From Feb. 2000 To Dec. 2004.

EXPERIENCES

- ✓ Growth of Single Crystals (Semiconductor Materials) by Bridgman Technique, Czochralski Technique and Chemical Vapor Deposition (CVD), .. etc.
- ✓ Measurements of the electrical conductivity and Hall coefficient.
- ✓ Measurements of the thermoelectrical power.
- ✓ Study of Switching Phenomena.
- ✓ Measurements of Photoconductivity.
- ✓ Preparation of Semiconductor and Metallic Nanoparticles by Physical and Chemical methods.
- ✓ Training at the Inter University Accelerator Center (IUAC) New Delhi, India (Formerly Nuclear Science Center (NSC)) during 15th – 30th May 2006.
- ✓ Preparation of Nano-Crystalline Thin Films by Thermal Evaporation, E-beam Evaporation and Spin Coating System for Solar Cell Applications.
- ✓ Structural Properties by X-ray Diffraction System and EDAX Analysis.
- ✓ Microscopy Techniques including high-resolution TEM, SEM and Scanning Probe Microscopy Techniques such as, AFM and STM.
- ✓ Optical Properties such as, UV-Visible Absorption and Fluorescence Spectroscopy.
- ✓ Thermal Analysis Techniques such as, TGA/DTA and DSC.
- ✓ Spectroscopic Techniques such as, FT-IR and Raman Spectroscopy.
- ✓ Electron paramagnetic Resonance (EPR) Analysis.

COMPUTER SKILLS

- ❖ Familiar with all windows OS and office packages.
- ❖ Familiar with origin packages for statistical processing.
- ❖ Hardware maintains of both Desktops and laptops.
- ❖ Familiar with computer programming using Visual Basic.

RESEARCH INTEREST

Solid State Physics, Semiconductors Materials, Crystal growth, Single Crystals, The synthesis and Characterization of Semiconductor and Metallic Nanocrystals and Their Applications in Solar Cell and Biological Labels.

COURSES AND WORKSHOPS

M.Sc Courses

1. Semiconductor
2. Thin Films
3. Crystal Structure
4. Superconductivity
5. Crystal Growth
6. Experimental Solid State Physics
7. Practical Physics

Ph.D Courses

1. Crystal Growth Theory
2. Crystal Growth Experimental Techniques
3. Semiconductor Devices
4. Nanomaterial and Nanotechnology

Workshops

- 1- “International Workshop on Crystal Growth & Characterisation of Advanced Materials”, 9th – 13th January 2006, Organized by Crystal Growth Centre, Anna University, Chennai-600025, Tamil Nadu, India.
- 2- “Awareness Program on Nanoscience and Technology”, 19th - 20th September 2007, Organized by Centre of Nanoscience and Technology & Crystal Growth Centre, Anna University, Chennai-600025, Tamil Nadu, India.
- 3- “ Workshop on Nanostructured Materials (In honour of Prof. Dr.S. Ramasamy) ”, 4th - 5th July 2008, Organized by Department of Nuclear Physics, University of Madras, Guindy Campus, Chennai-600025, Tamil Nadu, India.
- 4- One day Workshop on 7th July 2008 conducted by SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY, IITM, CHENNAI on UV-VIS-NIR / FLUORESCENCE / LIFE TIME SCAN, Organized by SAIF, INDIAN INSTITUTE OF TECHNOLOGY MADRAS, Chennai-600036, Tamil Nadu, India.

5- One day Workshop on 12th November 2008 conducted by SOPHISTICATED ANALYTICAL INSTRUMENT FACILITY, IITM, CHENNAI on Instrumentation and Applications of TGA-DTA & DSC, Organized by SAIF, INDIAN INSTITUTE OF TECHNOLOGY MADRAS, Chennai-600036, Tamil Nadu, India.

6- “Indo-US Workshop on Visible and Ultraviolet Sources for Solid State Lighting & Water Purification”, 5th - 7th January 2009, Organized by Crystal Growth Centre, Anna University, Chennai-600025, Tamil Nadu, India.

7- **“Development of CdTe Nanocomposites and Their Characterization”**

S. Moorthy Babu, **M. S. Abd El-sadek** and J. Ram kumar

“International Workshop on Advances in Nano Science and Technology”, 28th – 30th October 2009, Organized by ICTP, Trieste, Italy and Crystal Growth Centre & Centre of International Affairs & Centre of Nanoscience and Technology & Department of Physics, Anna University, Chennai-600025, Tamil Nadu, India.

8- “US-Egypt Advanced Studies Institute, Nanomaterials and Nanocatalysis for Energy, Petrochemicals and Environmental Applications” 28th March – 5th April 2010, Organized by National Research Centre, Cairo-Egypt and National Science Foundation, USA.

MEMBERSHIPS

- 1- The International NanoScience Community (TINC).
- 2- Arab Materials Science and Nanotechnology Network (AMSN).
- 3- Egyptian Nanotechnology Network (ENN).

RESEARCH GUIDANCE

- 1- One M.Sc (In Progress) thesis title **"Synthesis and Characterization of TiO₂ Nanoparticles for Photocatalytic Applications"**.

- 2- One Ph.D (In Progress) thesis title "**Synthesis and Characterization of (Core-Shell) Composite Nanoparticles**".

REFEREES FOR INTERNATIONAL JOURNALS

- 1- Science of Advanced Materials

PUBLICATIONS

International Journals

1. **“Transport Properties of Bi₂S₃ Single Crystals”**
H. T. Shaban, M. M. Nassary, and **M. S. El-sadek**
Physica B : Condensed Matter, (2008), Vol. 403, pp. 1655-1659.
2. **“Semiconductor Parameters of Bi₂Te₃ Single Crystal”**
M. M. Nassary, H. T. Shaban, and **M. S. El-sadek**
Materials Chemistry and Physics, (2009), Vol. 113, pp. 385-389.
3. **“Optical Properties of Thiol-Stabilized CdTe Nanoparticles”**
M. S. Abd El-sadek, J. Ram kumar, and S. Moorthy Babu
International Journal of Nanoparticles, (2009), Vol. 2, pp. 20-29.
4. **“The role of Potassium Tellurite as Tellurium Source in Mercaptoacetic-Acid-Capped CdTe Nanoparticles”**
M. S. Abd El-sadek, J. Ram kumar, and S. Moorthy Babu
Current Applied Physics, (2010), Vol. 10, pp. 317-322.
5. **“Selective Synthesis and Characterization of CdTe@Mn(OH)₂ (Core-Shell) Composite Nanoparticles”**
M. S. Abd El-sadek, J. Ram Kumar, S. Moorthy Babu, and
M. Salim El-Hamidy
Journal of Alloys and Compounds, (2010), Vol. 496, pp. 589-594.
6. **“Synthesis and Optical Characterization of Nanocrystalline CdTe Thin Films”**
A.A. Al-Ghamdi, Shamshad A. Khan, A. Nagat, and **M.S. Abd El-Sadek**
Optics & Laser Technology, (2010), Vol. 42, pp. 1181-1186.

- 7. "Growth and Optical Characterization of Colloidal CdTe Nanoparticles Capped by a bifunctional Molecule"**
M. S. Abd El-sadek and S. Moorthy Babu

Physica B: Condensed Matter (2010), Vol. 405, pp. 3279-3283.
- 8. "Aqueous Synthesis and Characterization of CdTe@Co(OH)₂ (Core-Shell) Composite Nanoparticles"**
M. S. Abd El-sadek and S. Moorthy Babu

Materials Chemistry and Physics (2010), Vol. 124, pp. 592-599.
- 9. "A Controlled Approach for Synthesizing CdTe@CrOOH (Core-Shell) Composite Nanoparticles"**
M. S. Abd El-sadek and S. Moorthy Babu

Submitted to Current Applied Physics (December 2009)
- 10. "Structural Properties and Transport Mechanisms of Thermally Vacuum Evaporated CdTe Nanocrystalline Thin Films"**
A. Al-Ghamdi, M. S. Abd El-sadek, A. Nagat, and F. El-Tantaway

Submitted to Materials Chemistry and Physics (August 2010)
- 11. "Investigation of Linear and Nonlinear Optical Properties of Mercaptoacetic Acid- Capped CdTe Nanoparticles by Z-scan Technique"**
M. S. Abd El-sadek, S. Moorthy Babu, Ahmad Y. Nooralden, and P. K. Palanisamy

Submitted to Journal of Alloys and Compounds (September 2010)
- 12. "Influence of Different Stabilizer on the Optical and Nonlinear Optical Properties of CdTe Nanoparticles"**
M. S. Abd El-sadek, Ahmad Y. Nooralden, S. Moorthy Babu, and P. K. Palanisamy

Submitted to Physica B: Condensed Matter (September 2010)
- 13. "CdTe@Cu(OH)₂ Nanocomposite: Aqueous Synthesis and Characterization"**
M. S. Abd El-sadek, J. Ram kumar, and S. Moorthy Babu

Submitted to Journal of Solid State Chemistry (September 2010)

National / International Conferences

1. “Transport Properties of Bi₂S₃ Single Crystals”

H. T. Shaban, M. M. Nassary, and **M. S. El-sadek**

The XXV Conference on Solid State Physics and Materials Science & Workshop on Photonic Materials and Optoelectronic Devices (II) 6th - 10th March 2005, Luxor, Upper Egypt.

2. “Semiconductor Parameters of Bi₂Te₃ Single Crystal”

M. M. Nassary, H. T. Shaban, and **M. S. El-sadek**

The XXV Conference on Solid State Physics and Materials Science & Workshop on Photonic Materials and Optoelectronic Devices (II) 6th - 10th March 2005, Luxor, Upper Egypt.

3. “Influence of Thiol-Capping on the Properties of CdTe and CdSe Nanoparticles”

M. S. Abd El-sadek, J. Ram kumar, and S. Moorthy Babu

Proceedings of Regional Level Seminar on Crystal Growth and Nanoscience (With National Level Participation) Crystal-Nano-2007, 30th, 31st August & 1st September, 2007, Department of Physics, Aditanar College of Arts and Science, Tiruchendur-628216, Tamil Nadu, India.

4. “Effect of Microwave Irradiation on the CdSe Nanoparticles Synthesized by Wet Chemical Method”

J. Ram Kumar, **M. S. Abd El-sadek**, and S. Moorthy Babu

Proceedings of Regional Level Seminar on Crystal Growth and Nanoscience (With National Level Participation) Crystal-Nano-2007, 30th, 31st August & 1st September, 2007, Department of Physics, Aditanar College of Arts and Science, Tiruchendur-628216, Tamil Nadu, India.

5. “Wet chemical and Microwave-assisted synthesis of CdTe Nanoparticles”

M. S. Abd El-sadek, J. Ram kumar, and S. Moorthy Babu

Indo-Australia Symposium on Multifunctional Nanomaterials, Nanostructures and Applications – 2007 (MNNA - 2007), 19th - 21st December 2007, Department of Physics and Astrophysics, University of Delhi, Delhi – 110007, India.

6. “Synthesis and Characterization of Thiol-Stabilized CdTe Nanoparticles”

M. S. Abd El-sadek, J. Ram kumar, and S. Moorthy Babu

The XXVII Conference on Solid State Physics and Materials Science & Workshop on Nanostructure Science in Solids and Biological Systems 24th -27th March 2008, Gulf of Suez, Ain Soukhna, Egypt.

7. “Optical Properties of Thiol-Stabilized CdTe Nanoparticles”

M. S. Abd El-sadek, J. Ram kumar, and S. Moorthy Babu

International Conference on Nanotechnology: Opportunities and Challenges, (ICON008), 17th - 19th June 2008, King Abdul Aziz University, Jeddah, The Kingdom of Saudi Arabia.

8. “Growth and Optical Characterization of Colloidal CdTe Nanoparticles Capped by a bifunctional Molecule”

M. S. Abd El-sadek and S. Moorthy Babu

National Conference on Semiconductor Materials & Technology (NC-SMT 2008), 16th - 18th October 2008, Department of Physics, Gurukula Kangri Vishwavidyalaya (Haridwar-249404, Uttarakhand) & Semiconductor Society (New Delhi) India.

9. “Development of Nanostructured Cadmium Telluride for Solar Cell Applications”

M. S. Abd El-sadek and S. Moorthy Babu

18th International Photovoltaic Science and Engineering Conference & Exhibition (PVSEC18), 19th -23rd January 2009, Science City Convention Center, Kolkata, India.

10. “Aqueous Synthesis and Characterization of CdTe@Co(OH)₂ (Core-Shell) Composite Nanoparticles”

M. S. Abd El-sadek, J. Ram kumar, and S. Moorthy Babu

The International Conference For Nanotechnology Industries, The Leading Technology of 21st Century, 5th – 7th April 2009, King Abdallah Institute for Nanotechnology, King Saud University, Riyadh, The Kingdom of Saudi Arabia.

11. “The influence of Thiol-Capping and Precursors Ratio on the Optical Properties of CdTe Nanoparticles”

M. S. Abd El-sadek, Ahmad Y. Nooralden, J. Ram Kumar,
S. Moorthy Babu and P. K. Palanisamy

1st NANO TODAY CONFERENCE, 2nd – 5th August 2009, Singapore.

12. “Facile Synthesis and Characterization of CdTe@Co(OH)₂ and CdTe@Ni(OH)₂ (Core-Shell) Composite Nanoparticles”

M. S. Abd El-sadek, J. Ram kumar, and S. Moorthy Babu

1st NANO TODAY CONFERENCE, 2nd – 5th August 2009, Singapore.

13. “A Controlled Approach for Synthesizing CdTe@CrOOH (Core-Shell) Composite Nanoparticles”

M. S. Abd El-sadek, J. Ram Kumar, S. Moorthy Babu, and
M. Salim El-hamidy

Nano and Giga Challenges in Electronics, Photonics and Renewable Energy, 14th Canadian Semiconductor Technology Conference, Symposium and Summer School (Tutorial Lectures), 10th -14th August 2009, Hamilton, Ontario, Canada.

14. “Investigation of Linear and Nonlinear Optical Properties of Capped CdTe Nanoparticles by Z-scan Technique”

M. S. Abd El-sadek, J. Ram Kumar, S. Moorthy Babu,
Ahmad Y. Nooralden, P. K. Palanisamy and M. Salim El-hamidy
5th International Symposium on Laser, Scintillator and Non Linear Optical Materials (ISLNOM-5), 3th – 5th September 2009, Pisa, Italy.

15. “Selective Synthesis and Characterization of CdTe@Mn(OH)₂ (Core-Shell) Composite Nanoparticles”

M. S. Abd El-sadek, J. Ram Kumar, S. Moorthy Babu, and
M. Salim El-hamidy

5th International Symposium on Laser, Scintillator and Non Linear Optical Materials (ISLNOM-5), 3th – 5th September 2009, Pisa, Italy.

16. “CdTe@Cu(OH)₂ Nanocomposite: Aqueous Synthesis and Characterization”

M. S. Abd El-sadek, J. Ram kumar, and S. Moorthy Babu

The Third Arab International Conference in Physics and Materials Science (CPMS), 20th – 22nd October 2009, Bibliotheca Alexandria, Egypt.

17. “The influence of Precursors Molar Ratio on the Optical and Nonlinear Optical Properties of CdTe Nanoparticles”

M. S. Abd El-sadek, Ahmad Y. Nooralden, J. Ram Kumar,
S. Moorthy Babu and P. K. Palanisamy

The Third Arab International Conference in Physics and Materials Science (CPMS), 20th – 22nd October 2009, Bibliotheca Alexandria, Egypt

18. “Impedance Spectroscopy for Monitoring the Conduction Mechanism and the Relaxation Process of Organic Semiconductor”

I. S. Yahia and **M. S. Abd El-sadek**

The XXVIII Conference on Solid State Sciences and Materials Physics & Workshop on Functional Nanostructures and Hybrid Organic-Inorganic Materials, 22th - 25th March 2010, Fayoum, Egypt.

19. “ Structural, Electrical Properties and Transport Mechanism of CdTe Nanocrystalline”

M. S. Abd El-sadek and I. S. Yahia

The XXVIII Conference on Solid State Sciences and Materials Physics & Workshop on Functional Nanostructures and Hybrid Organic-Inorganic Materials, 22th - 25th March 2010, Fayoum, Egypt.

20. “The influence of Thiol-Capping and Refluxing Time on the Characterizations of CdTe Nanoparticles”

M. S. Abd El-sadek and S. Moorthy Babu

The XXVIII Conference on Solid State Sciences and Materials Physics & Workshop on Functional Nanostructures and Hybrid Organic-Inorganic Materials, 22th - 25th March 2010, Fayoum, Egypt.

21. “Facile Synthesis and Characterization of Pure and Ag-doped TiO₂ Nanoparticles for Photocatalytic Applications”

M. S. Abd El-sadek and Ahmed A. Abd El-rady

Submitted to The 5th Meeting of Saudi Physical Society (SPS5), PHYSICS AND ENERGY HORIZONS, will be held at King Khalid, Abha, Saudi Arabia, 25th-27th October 2010.

22. “Transport Mechanisms of Thermally Evaporated CdTe Nanocrystalline Thin Films”

A.A. Al-Ghamdi, **M. S. Abd El-sadek**, A.T. Nagat and F. El-Tantaway

Submitted to The 5th Meeting of Saudi Physical Society (SPS5), PHYSICS AND ENERGY HORIZONS, will be held at King Khalid, Abha, Saudi Arabia, 25th-27th October 2010.

23. “A novel Synthesis and Characterization of TiO₂ Nanoparticles for Photocatalytic Applications”

M.M. El-sayed Breky, Ahmed A. Abd El-rady, **M.S. Abd El-sadek** and A.F. Assaf

Submitted to International Conference on Materials Imperatives in the New Millennium (MINM 2010), will be held at Central Metallurgical Research and Development Institute (CMRDI), Cairo, Egypt, 29th November - 2nd December. 2010.

REFERENCES

- **Prof. Tõnu Pullerits**, Department of Chemical Physics, Lund University, P.O. Box 124, SE-22100 Lund, Sweden.
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- **Prof. S.O. Elkhateeb**, Dean of Faculty of Science, South Valley University, Qena-83523, Egypt.
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- **Prof. J. Kumar**, Former Director of Crystal Growth Centre, Anna University, Chennai-600025, Tamil Nadu, India.
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- **Prof. Mohamed Henini**, Professor of Applied Physics, School of Physics & Astronomy, University of Nottingham, Nottingham NG7 2RD, UK.
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- **Prof. KyooHo Kim**, Vice President for Industry-Academic Research / Head of Industry-Academic Cooperation Foundation, Yeungnam University, 214-1 Dae-dong, Gyeongsan, Gyeongbuk, 712-749 Korea.
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- **Prof. Fahrettin Yakuphanoglu**, Physics Department, Faculty of Arts and Sciences, Firat University, 23119 Elazig, Turkey.
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- **Prof. S. A. Hussein.**, Physics Department, Faculty of Sciences, South Valley University, Qena-83523, Egypt.
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