Progress Report*
(16 May 2006 to Present)

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http://www.geocities.com/rohelakhan/ **http://rohelakhan.googlepages.com/**
http://www.imsc.res.in/~jagan/khan-cv.html

Courses Taught

1. **Spring Semester** (May-July 2006)
   - Physics-I (5 Sections)
2. **Fall Semester** (September-December 2006)
   - Physics-I (3 Sections)
3. **Spring Semester** (January-April 2007)
   - Physics-I (3 Sections)
4. **Summer Semester** (May-July 2007)
   - Physics-I (2 Sections)
5. **Fall Semester** (September-December 2007)
   - Physics-I (3 Sections)
   - Physics-II (1 Laboratory Section)
6. **Spring Semester** (January-May 2008)
   - Physics-I (3 Sections)
7. **Summer Semester** (May-July 2008)
   - Physics-I (3 Sections)
8. **Fall Semester** (September-December 2008)
   - Physics-I (3 Sections)
   - Physics-II (1 Laboratory Section)
9. **Spring Semester** (January-May 2009)
   - Physics-I (4 Sections)
10. **Summer Semester** (May-July 2009)
    - Physics-I (4 Sections)

*Updated on Friday the 09 October 2009

11. **Fall Semester** (September-December 2009)
    - Physics-I (3 Sections)
    - Physics-II (2 Laboratory Sections)

Committees

1. **Time Table Committee**
   (September 2006 - January 2009).

2. **Examination Committee**
   (October 2006 - January 2009).

3. **E-Learning and Library Committee**
   (April 2007 to June 2008).

4. **Moderation Committee**
   (September 2007 - January 2009).

5. **Staff Development Committee**
   (November 2007 - January 2009).

6. **Staff Research and Consultancy** (*Chairman*)
   (Group-8, under the Oman Quality Assurance Framework)
   (October 2008 -).

7. **Accreditation Steering Committee**
   (Portfolio Preparation for the Oman Accreditation Council)
   (November 2008 -).

8. **Curriculum Review & Development Committee**
   (February 2009 -).

9. **Academic Journal Committee**
   (September 2009 -).

10. **Staff Handbook Committee**
    (October 2009 -).

11.

PATENTS

Quadricmeter is the instrument devised to identify (distinguish) and measure the various parameters (axis, foci, latera recta, directrix, etc.,) completely characterizing the important class of surfaces known as the quadratic surfaces. Quadratic surfaces (also known as quadrics) include a wide range of commonly encountered surfaces including, cone, cylinder, ellipsoid, elliptic cone, elliptic cylinder, elliptic hyperboloid, elliptic paraboloid, hyperbolic cylinder, hyperbolic paraboloid, paraboloid, sphere, and spheroid. Quadricmeter is a generalized form of the conventional spherometer and the lesser known cylindrometer (also known as the Cylindro-Spherometer). With a conventional spherometer it was possible only to measure the radii of spherical surfaces. Cylindrometer can measure the radii of curvature of a cylindrical surface in addition to the spherical surface. In both the spherometer and the cylindrometer one assumes the surface to be either spherical or cylindrical respectively. In the case of the quadricmeter, there are no such assumptions.

- Sameen Ahmed Khan,
  Quadricmeter,
  Official Journal of the Patent Office, Issue No. **43/2008**, Part-I, pp. 25296 (24 October 2008).
  Application No.: **2126/MUM/2008 A**, International Classification: **B69G1/36**,
  Controller General of Patents Designs and Trade Marks, Government of India.

  `http://ipindia.nic.in/ipr/patent/journal_archieve/journal_2008/patent_journal_2008.htm`

  `http://ipindia.nic.in/ipr/patent/journal_archieve/journal_2008/pat_arch_102008/official_journal`

  `http://www.patentoffice.nic.in/, http://www.ipindia.nic.in/`

  (*patent in process*, http://www.geocities.com/rohelakhan/quadricmeter.html).

- Sameen Ahmed Khan,
  Conicmeter,
  (*in process*).

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PUBLICATIONS

Contributions to International Reports:

- ···, Sameen Ahmed KHAN, ···, (*one of the 500+ Contributors, from 325 Institutions*),
  International Linear Collider Reference Design Report, (*Four Volumes*)
  ILC Global Design Report and World Wide Study,
  (August 2007).
  ILC: International Linear Collider.
  E-Print: http://arxiv.org/abs/0712.1950/.

A. Review Articles

- Sameen Ahmed Khan,
  The Foldy-Wouthuysen Transformation Technique in Optics,
  Invited article in:
  Advances in Imaging and Electron Physics, *Editor*: Peter W. Hawkes,
  (Elsevier, 2008) **Vol. 152**, pp. 49-78 (August 2008).
  (ISBN-10: 0123742196 and ISBN-13: 978-0-12-374219-3).

B. Refereed Publications

1. Sameen Ahmed Khan,
   Maxwell Optics of Quasiparaxial Beams,
   Optik-International Journal for Light and Electron Optics, **120**, Issue ??, pp. ???-??? (??? 2009).
   (http://www.elsevier-deutschland.de/ijleo/).
   (*in press*, Digital Object Identifier, http://dx.doi.org/10.1016/j.ijleo.2008.07.027).

2. Sameen Ahmed Khan,
   Quantum Methodologies in Light Beam Optics.
   (*in preparation*).

3. Sameen Ahmed Khan,
   Generalized Spherometer.
   (*in preparation*).

The corrections to the traditional descriptions rigorously derived in the above articles have a significant bearing on the celebrated Scherzer Theorem in the wavelength-dependent regime in electron microscopy and the algebraically equivalent system of fiber optics. I shall be applying for a patent in the near future.

C. Expository Publications

1. Sameen Ahmed Khan,
   Microsoft Excel in the Physics Classroom,
   in *Proceedings* of **The Third Annual Conference for Middle East Teachers of Mathematics, Science and Computing** (**METSMaC 2007**),
   The Petroleum Institute, Abu Dhabi, United Arab Emirates, 17-19 March 2007.
   Editors: Seán M. Stewart, Janet E. Olearski, Peter Rodgers, Douglas Thompson and Emer A. Hayes, pp. 171-175 (2007).

2. Sameen Ahmed Khan,
   Data Analysis Using Microsoft Excel in the Physics Laboratory,
   Bulletin of the IAPT, **24**(6), pp. 184-186 (June 2007).
   (**IAPT**: Indian Association of Physics Teachers).

3. Sameen Ahmed Khan,
   Cylindro-Spherometer,
   Bulletin of the IAPT, **26**(1), pp. 4-6 (January 2009).
   (**IAPT**: Indian Association of Physics Teachers).

4. Sameen Ahmed Khan,
   Spherometer and Cylindrometer, (*communicated*).
   The article discusses the traditional spherometer and some variants such as the ring spherometer and the cylindrometer (also known as Cylindro-Spherometer), fabricated by the author.

5. Sameen Ahmed Khan,
   Quadratic Surfaces.
   (*in preparation*).

6. Sameen Ahmed Khan,
   Coordinate Geometric Approach to.
   (*in preparation*).

7. Sameen Ahmed Khan,
   Doing Numerical Calculus using Microsoft EXCEL.
   (*in preparation*).

8. Sameen Ahmed Khan,
   Numerical Techniques using Microsoft EXCEL.
   (*in preparation*).

9. ..., Sameen Ahmed Khan, ...,
   Numerical Methods with Microsoft Excel.
   (*in preparation*).

Non-Technical Writings†

1. Sameen Ahmed Khan,
   Origins of the Word Mosque,
   Islamic Voice, **19-06** No. 234, pp. 20 (June 2006).
   (in the section, *History & Heritage*);
   Radiance Viewsweekly, **Vol. XLIV**, No. 20, pp. 32 (29 October - 04 November 2006).
2. Sameen Ahmed Khan,
   What is Mathematics?,
   Youth Observer, pp. 14 (October 2006 Ramadhan 1427 AH).
   Supplement to *Oman Observer*, **Vol. 25, No. 327**, (Saturday the 07 October 2006).
   (**OEPNPA**: Oman Establishment for Press, News, Publication and Advertising in co-operation with the Ministry of Education).
3. Sameen Ahmed Khan,
   A Date with Tradition,
   Radiance Viewsweekly, **Vol. XLIV**, No. 17, pp. 28-29 (1-7 October 2006).
4. Sameen Ahmed Khan,
   Olive the Blessed Tree,
   Radiance Viewsweekly, **Vol. XLIV**, No. 18, pp. 22-23 (8-14 October 2006);
   Youth Observer, pp. 12 (November 2006 Shawwal 1427 AH).
   Supplement to *Oman Observer*, **Vol. 25, No. 355**, (Saturday the 04 November 2006).
   (**OEPNPA**: Oman Establishment for Press, News, Publication and Advertising in co-operation with the Ministry of Education).
5. Sameen Ahmed Khan,
   The Sajdah Tilawat (Prostration Verses in the Quran),
   Radiance Viewsweekly, **Vol. XLIV**, No. 20, pp. 7 (29 October - 04 November 2006);
   Islamic Voice, **20-10** No. 250, pp. 31 (October 2007).
6. Sameen Ahmed Khan,
   The Google Literacy Project,
   Radiance Viewsweekly, **Vol. XLIV**, No. 24, pp. 27 (26 November - 02 December 2006);
   Youth Observer, pp. 5 (December 2006 Dhul Qaada 1427 AH).
   Supplement to *Oman Observer*, **Vol. 26, No. 18** (Saturday the 02 December 2006).
   (**OEPNPA**: Oman Establishment for Press, News, Publication and Advertising in co-operation with the Ministry of Education).
7. Sameen Ahmed Khan,
   Fifty Years of UNSCEAR the UN Scientific Committee on the Effects of Atomic Radiation,
   IRPS Bulletin, **20**(3), 15-16 (December 2006).
   (**IRPS**: International Radiation Physics Society);
   Bulletin of the IAPT, **24**(2), pp. 49 & 52 (February 2007).
   (**IAPT**: Indian Association of Physics Teachers);
   AAPPS Bulletin, **17** (1), pp. 32-33 (February 2007).
   (**AAPPS**: Association of Asia Pacific Physical Societies).
8. Sameen Ahmed Khan,
   The 15th Asian Games Conclude in Qatar;
   Lady Sprinter Debunks Hijab Myth on Track,
   Radiance Viewsweekly, **Vol. XLIV**, No. 28, pp. 96-97 (31 December 2006 - 6 January 2007).
9. *Reported* by Sameen Ahmed Khan,
   Sprinter in Hijab wins Gold at the 15th Asian Games,
   Islamic Voice, **20-01** No. 241, pp. ?? (January 2007, Zil-Hijjah 1427/Muharram 1428).

†This List is Incomplete!

10. Sameen Ahmed Khan,
Physics,
Youth Observer, pp. 14 (January 2007 - Dhul Hijjah 1427 AH).
Supplement to Oman Observer, **Vol. 26, No. 63** (Tuesday the 16 January 2007).
(**OEPNPA**: Oman Establishment for Press, News, Publication and Advertising in co-operation with the Ministry of Education).
11. *Reported* by Sameen Ahmed Khan,
The King Faisal International Prizes for 2007,
Islamic Voice, **20-02** No. 242, pp. ?? (February 2007, Muharram/Safar 1428);
Radiance Viewsweekly, **Vol. XLIV**, No. 33, pp. 28-29 (4-10 February 2007);
The Washington Report on Middle East Affairs, Vol. **XXVI**, No. 3, pp. 69 (April 2007).
Available at *Encyclopedia Britannica Online*, Article No. 9047386.
(http://www.britannica.com/eb/topic-332631/article-9047386/).
The Prizes are awarded every year by the King Faisal Foundation (**KFF**), Saudi Arabia.
12. Sameen Ahmed Khan,
Spreadsheets in Science and Education,
Youth Observer, pp. 10 (March 2007 - Safar 1428 AH).
Supplement to Oman Observer, **Vol. 26, No. 116** (Saturday the 10 March 2007).
(**OEPNPA**: Oman Establishment for Press, News, Publication and Advertising in co-operation with the Ministry of Education).
13. Sameen Ahmed Khan,
Microsoft Excel in the Physics Classroom,
in *Proceedings* of **The Third Annual Conference for Middle East Teachers of Mathematics, Science and Computing** (**METSMaC 2007**),
The Petroleum Institute, Abu Dhabi, United Arab Emirates, 17-19 March 2007.
Editors: Seán M. Stewart, Janet E. Olearski, Peter Rodgers, Douglas Thompson and Emer A. Hayes, pp. 171-175 (2007).
14. Sameen Ahmed Khan,
Science Historian Roshdi Hifni Rashed Awarded the King Faisal International Prize for 2007,
Europhysics News **38**(2), pp. 7 (March-April 2007).
(Publication of the *European Physical Society*);
AAPPS Bulletin, **17**(4), pp. 37 (August 2007).
(**AAPPS**: Association of Asia Pacific Physical Societies).
The Prizes are awarded every year by the King Faisal Foundation (**KFF**), Saudi Arabia.
15. Sameen Ahmed Khan,
Report of the Workshop on Economic Development for Physicists from Developing Countries, (**EDPDC**),
(27 November - 01 December 2006, The Abdus Salam International Centre for Theoretical Physics (**ICTP**), Trieste, Italy).
Bulletin of the IAPT, **24**(5), pp. 156 & 158 (May 2007).
(**IAPT**: Indian Association of Physics Teachers);
AAPPS Bulletin, **18** (1), pp. 37-38 (February 2008).
(**AAPPS**: Association of Asia Pacific Physical Societies).
16. Sameen Ahmed Khan,
Chemistry,
Youth Observer, pp. 13 (May 2007 - Rabee Al Thani 1428 AH).
Supplement to Oman Observer, **Vol. 26, No. 174** (Monday the 07 May 2007).
(**OEPNPA**: Oman Establishment for Press, News, Publication and Advertising in co-operation with the Ministry of Education).
17. Sameen Ahmed Khan,
Data Analysis Using Microsoft Excel in the Physics Laboratory,
Bulletin of the IAPT, **24**(6), pp. 184-186 (June 2007).
(**IAPT**: Indian Association of Physics Teachers).

18. Sameen Ahmed Khan,
Message to those affected by the Cyclone Gonu,
Letter, in *The Week*, Issue **224**, pp. 2 (20 June 2007).
(The Apex Press and Publishing, Muscat, Sultanate of Oman).
19. Sameen Ahmed Khan,
Sophisticated Geometry in Islamic Architecture,
Radiance Viewsweekly, **Vol. XLV**, No. 3, pp. 7 (22-28 July 2007);
Penrose Geometry Evokes New Interest,
Islamic Voice, **Vol. 20-12** No. 252, pp. ?? (December 2007).
20. Sameen Ahmed Khan,
Sultan Qaboos Chair for Arabic Studies in Beijing University,
Radiance Viewsweekly, **Vol. XLV**, No. 3, pp. 17 (22-28 July 2007).
21. Sameen Ahmed Khan,
Saudi Arabia Launches a Research University,
Radiance Viewsweekly, **Vol. XLV**, No. 12, pp. 18-19 (30 September - 6 October 2007);
Islamic Voice, **Vol. 20-11** No. 251, pp. 39 (November 2007).
The King Abdullah University of Science and Technology (**KAUST**), Thuwal, Saudi Arabia.
22. Sameen Ahmed Khan,
Arab Origins of the Discovery of the Refraction of Light;
Roshdi Hifni Rashed Awarded the 2007 King Faisal International Prize,
Optics & Photonics News (OPN), **18** (10), pp. 22-23 (October 2007).
The Prizes are awarded every year by the King Faisal Foundation (**KFF**), Saudi Arabia.
23. Sameen Ahmed Khan,
Synchrotron X-Ray ki Tarz ki Nahayat Taraquiyaftah Machine: Mashraqui-wasta ke liye Germany ka Atyah,
(Article in Urdu, **Synchrotron an Advanced X-Ray Source: Germany's Gifts to the Middle East**),
Zikra Jadeed, **Vol. 4**, No. 43, pp. 27-33 (October 2007).
(Zikra Jadeed is a monthly publication from Delhi, India).
Tarjumani/Translator: Dr. Azher Majid Siddiqui, http://www.geocities.com/azherms/.
24. Sameen Ahmed Khan,
Impact of ICT in various spheres of life,
Digital Oman, Issue 11, pp. 37-38 (Fall 2007).
Supplement to Oman Observer, **Vol. 27, No. 19** (Monday the 03 December 2007).
A quarterly, English-Arabic bilingual publication by Oman Establishment for Press, News, Publication and Advertising (**OEPNPA**) in partnership with the Information Technology Technical Secretariat (**ITTS**) at the Ministry of National Economy and the Public Establishment for Industrial Estates (**PEIE**).
25. Sameen Ahmed Khan,
Regarding the Etiquette of Hajj,
Letter in *Islamic Voice*, **Vol. 21-02** No. 254, pp. ?? (February 2008);
Pakistan Link, pp. ??? (Friday the 04 April 2008). (Published from Irvine, California, USA).
26. Sameen Ahmed Khan,
Review of the Books:
The History of Makkah Mukarramah (**ISBN**: 9960-44-929-7) and
The History of Madinah Munawwarah (**ISBN**: 9960-43-442-7)
by Dr. Muhammad Ilyas Abdul Ghani,
(Al-Rasheed Printers, Madinah Munawwarah, Kingdom of Saudi Arabia).
Islamic Voice, **Vol. 21-02** No. 254, pp. 33 (February 2008);
Radiance Viewsweekly, **Vol. XLV**, No. 29, pp. ?? (February 2008).
Long Book Review:
Renaissance, **Vol. 18**, No. 09, pp. ??-?? (September 2008).

27. Sameen Ahmed Khan,
What is E-Learning?,
Youth Observer, pp. 7 (April 2008 - Rabee Al Awwal 1429 AH).
Supplement to Oman Observer, **Vol. 27, No. 144** (Sunday the 06 April 2008).
(**OEPNPA**: Oman Establishment for Press, News, Publication and Advertising in co-operation with the Ministry of Education).
28. Sameen Ahmed Khan,
Start with Eye Donations,
Letter, in *The Week*, Issue **268**, pp. 2 (23 April 2008).
(The Apex Press and Publishing, Muscat, Sultanate of Oman).
29. Sameen Ahmed Khan,
Report of the First International Conference on Arabs' and Muslims History of Sciences,
(24-27 March 2008, University of Sharjah, Sharjah, United Arab Emirates),
Islamic Voice, **Vol. 21-05**, No. 257, pp. ?? (May 2008);
American Journal of Islamic Social Sciences (**AJISS**), **Vol. 25**, No. 3, pp. 158-160 (Summer 2008).
30. Sameen Ahmed Khan,
Cylindro-Spherometer,
Bulletin of the IAPT, **26**(1), pp. 4-6 (January 2009).
(**IAPT**: Indian Association of Physics Teachers).
31. Sameen Ahmed Khan,
King Faisal International Prize 2009,
Europhysics News **40**(3), pp. 7 (May-June 2009).
(Publication of the *European Physical Society*).
32. Sameen Ahmed Khan,
Awareness is the first step, but shouldn't we have regulation?,
Letter, in *H! Magazine*, **Vol. III**, **Issue 13**, pp. 17 (Friday the 19 June 2009).
(Muscat Press & Publishing House, Muscat, Sultanate of Oman).
This issue is the *Energy Compliant Equipment*.
33. Sameen Ahmed Khan,
Spam is here to stay,
Letter, in *The Week*, Issue **330**, pp. 42 (01 July 2009).
(The Apex Press and Publishing, Muscat, Sultanate of Oman).
34. Sameen Ahmed Khan,
Spherometer and Cylindrometer, (*communicated*).
The article discusses the traditional spherometer and some variants such as the ring spherometer and the cylindrometer (also known as Cylindro-Spherometer), fabricated by the author.
35.

Articles in Preparation

- Sameen Ahmed Khan,
Medieval Arab Contributions to Optics;
Medieval Arab Contributions to Physics;
Medieval Arab Contributions to Mathematics.
- Sameen Ahmed Khan,
Quadratic Surfaces.
(*in preparation*).
- Sameen Ahmed Khan,
Coordinate Geometric Approach to.
(*in preparation*).
- Azher Majid Siddiqui and Sameen Ahmed Khan,
Introduction to Ion Beam Channeling.
- Sameen Ahmed Khan,
Fifty years of the IAEA - International Atomic Energy Agency.

- Sameen Ahmed Khan,
  Doing Numerical Calculus using Microsoft EXCEL.
- Sameen Ahmed Khan,
  Numerical Techniques using Microsoft EXCEL.
- Sameen Ahmed Khan,
  SESAME: Synchrotron-light for Experimental Science and Applications in the Middle East.
- Sameen Ahmed Khan,
  Information and Communication Technologies in our Lives.

Participation in Conferences & Visits to Institutions

1. 23-25 November 2006
   Dipartimento di Fisica Galileo Galilei
   Università di Padova
   Istituto Nazionale di Fisica Nucleare (**INFN**),
   Sezione di Padova, Padua/Padova
   ITALY.
   Collaboration: **The Halo Problem in Accelerator Beams**.
2. 27 November - 01 December 2006
   Workshop on Economic Development for Physicists from Developing Countries (EDPDC),
   Held at: The Abdus Salam International Centre for Theoretical Physics (**ICTP**), Trieste
   ITALY.
3. 15-18 August 2007
   The Institute of Mathematical Sciences (IMSc/Matscience),
   Chennai (Madras), INDIA.

- 23-28 May 2010 (**SCHEDULED**)
  International Particle Accelerator Conference (IPAC-2010),
  Kyoto, JAPAN.
  Poster-I: **Quantum Theory of Accelerator Optics (ID: 1668)**.
  Under the
  Main Classification: 05 Beam Dynamics and Electromagnetic Fields.
  Sub Classification: D01 - Beam Optics - Lattices, Correction Schemes, Transport.
  Poster-II: **Quantum Methodologies in Light Beam Optics (ID: 1669)**.
  Under the
  Main Classification: 05 Beam Dynamics and Electromagnetic Fields.
  Sub Classification: D01 - Beam Optics - Lattice, Correction Schemes, Transport.
- July-August 2010 (**SCHEDULED**)
  The Institute of Mathematical Sciences (IMSc/Matscience),
  Chennai (Madras), India.
- 28 March - 01 April 2011 (**SCHEDULED**)
  Particle Accelerator Conference (PAC-2011),
  New York, USA.
- 01-06 September 2011 (**SCHEDULED**)
  International Particle Accelerator Conference (IPAC-2011),
  Valencia, SPAIN.
- 2012 (**SCHEDULED**)
  International Particle Accelerator Conference (IPAC-2012),
  USA.
- 2013 (**SCHEDULED**)
  International Particle Accelerator Conference (IPAC-2013),
  Shanghai, CHINA (**Probable Location**).