

Technical Writings*

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Contributions to International Reports:

1. ..., A. Sameen KHAN, ..., (*one of the 300+ Contributors, from 73 Institutions*),
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2. ..., Sameen Ahmed KHAN, ..., (*one of the 500+ Contributors, from 121 Institutions*),
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3. ..., Sameen Ahmed KHAN, ..., (*one of the 250+ Contributors, from 79 Institutions*),
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5. ..., Sameen Ahmed KHAN, ..., (*one of the Signatories*),
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ILD Concept Group, International Linear Collider (ILC)
DESY 2009-87, FERMILAB-PUB-09-682-E, KEK Report 2009-6, (February 2010).
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E-Print arXiv: <http://arxiv.org/abs/1006.3396/>.
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Lecture Notes:

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The Notes cover the *Foundation Mathematics* and the Three-Semester Sequence of *Engineering Mathematics*, *College Mathematics*, *Calculus with Numerical Methods* and *Advanced Calculus*.
2. Sameen Ahmed Khan,
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The Notes cover the Two-Semester Sequence of *Physics* along with *Engineering Physics* and *Engineering Mechanics*.
3. Sameen Ahmed Khan,
Lecture Notes in Physics,
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Salalah College of Technology E-Learning Website,
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A. Books

1. Sameen Ahmed Khan,
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2. Sameen Ahmed Khan,
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3. Sameen Ahmed Khan,
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408 pages. <http://www.lap-publishing.com/>, <http://isbn.nu/9783659786198/>.
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B. Review Articles and Book Chapters

1. R. Jagannathan and S. A. Khan,
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3. Sameen Ahmed Khan,
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pp. 163-204 (30 December 2006).
(ISBN-10: 1600210287 and ISBN-13: 978-1600210280).
4. Sameen Ahmed Khan,
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5. Sameen Ahmed Khan,
Number Theory and Resistor Networks,
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Editor: Roy Abi Zeid Daou,
(Nova Science Publishers, New York, 2013, <http://www.novapublishers.com/>).
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6. Sameen Ahmed Khan,
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Chapter-1 in:
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C. Refereed Publications

1. S. A. Khan and R. Jagannathan,
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5. Sameen Ahmed Khan and Kurt Bernardo Wolf,
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8. Sameen Ahmed Khan,
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9. Sameen Ahmed Khan,
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13. Sameen Ahmed Khan and Farooq Ahmed Khan,
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14. Sameen Ahmed Khan,
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17. Sameen Ahmed Khan,
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18. Sameen Ahmed Khan,
Hamilton's Optical-Mechanical Analogy in the Wavelength-dependent Regime,
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21. Sameen Ahmed Khan,
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23. Sameen Ahmed Khan, Ramaswamy Jagannathan and Rajiah Simon,
Foldy-Wouthuysen transformation and a quasiparaxial approximation scheme for the scalar wave theory of light beams,
14 pages, (*communicated*).
24. Ramaswamy Jagannathan and Sameen Ahmed Khan,
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(*in preparation*).
25. Sameen Ahmed Khan and Ramaswamy Jagannathan,
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(*in preparation*).
26. Sameen Ahmed Khan,
Wavelength-dependent modifications in Maxwell Optics,
59 pages, (*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. An application shall be made for a patent in the near future!

D. E-Prints[†]
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An alternate way to obtain the aberration expansion in Helmholtz Optics,
 40 pages, *E-Print arXiv*: <http://arXiv.org/abs/physics/0210001/>.
2. Sameen Ahmed Khan,
Maxwell Optics: I. An exact matrix representation of the Maxwell equations in a medium,
 10 pages, *E-Print arXiv*: <http://arXiv.org/abs/physics/0205083/>.
3. Sameen Ahmed Khan,
Maxwell Optics: II. An Exact Formalism,
 23 pages, *E-Print arXiv*: <http://arXiv.org/abs/physics/0205084/>.
4. Sameen Ahmed Khan,
Maxwell Optics: III. Applications,
 13 pages, *E-Print arXiv*: <http://arXiv.org/abs/physics/0205085/>.
5. Sameen Ahmed Khan,
Wavelength-Dependent Effects in Maxwell Optics,
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The bounds of the set of equivalent resistances of n equal resistors combined in series and in parallel,
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7. Sameen Ahmed Khan,
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 (Friday the 09 March 2012).
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 35 pages, *E-Print archive arXiv*: <http://arxiv.org/abs/1311.3602/>.
 (Thursday the 14 November 2013).
9. Sameen Ahmed Khan,
A Statistical Approach to Prime Gaps and Andrica's Conjecture,
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E. In Proceedings & Preprints

1. S. A. Khan and R. Jagannathan,
Theory of relativistic electron beam transport based on the Dirac equation,
in: Proceedings of the 3rd National Seminar on Physics and Technology of Particle Accelerators and their Applications PATPAA-93, (25-27 November 1993, Kolkata (Calcutta)),
Editor: S. N. Chintalapudi (IUC-DAEF, Kolkata (Calcutta)), pp. 102-107 (1996).
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 Preprint: IMA-94/11 Presented at the **JSPS-KEK** International Spring School on High Energy Ion Beams — Novel Beam Techniques and their Applications, Japan, 17-29 March 1994.
<http://cds.cern.ch/record/263576>
3. S. A. Khan,
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 Preprint: IMA-96/33 (The Institute of Mathematical Sciences, Chennai (Madras), December 1996).

[†]These E-Prints are being rewritten as long *Reports* or/and *Review Articles*

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ICFA Beam Dynamics Newsletter, **13**, pp. 21-27 (April 1997).
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5. S. A. Khan,
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Editor: Pisin Chen, (World Scientific, Singapore, 1999), pp. 682-694 (1999).
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(IEEE Catalogue Number: 99CH36366), Vol. 4, pp. 2817-2819 (1999).
(Digital Object Identifier (DOI), <http://dx.doi.org/10.1109/PAC.1999.792948>).
7. Sameen A. Khan and Modesto Pusterla,
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(29 March - 02 April 1999, New York City, NY), *Editors: A. Luccio and W. MacKay*,
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12. Riti Sethi, Pravin Kumar, Sameen Ahmed Khan, Anver Aziz and Azher M. Siddiqui,
Effect of Nitrogen Ion Implantation on the Structural and Optical Properties of Indium Oxide Thin Films,
in: Proceedings of the Fifth Saudi International Meeting on Frontiers of Physics 2016, SIMFP 2016,
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F. Expository Publications

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2. Sameen Ahmed Khan,
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(**Kiran**: the Bulletin of the Indian Laser Association).
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Synchrotron Radiation (in Asia),
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5. Azher Majid Siddiqui and Sameen Ahmed Khan,
Ion Beam Channeling and Accelerator Programmes in India,
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(**MRSI**: Materials Research Society of India).
6. Fathiya Khamis Al Rawahi, Sameen Ahmed Khan and Abdul Huq,
Microsoft Excel in the Mathematics Classroom: A Case Study,
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Bulletin of the IAPT, **24** (6), 184-186 (June 2007).
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(**IAPT**: Indian Association of Physics Teachers).
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(**IAPT**: Indian Association of Physics Teachers).

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19. Sameen Ahmed Khan,
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- Ramaswamy Jagannathan and Sameen Ahmed Khan,
Quantum Mechanics of Charged Particle Beam Optics,
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- Sameen Ahmed Khan and Ramaswamy Jagannathan,
Quantum Methodology Approach to Light Beam Optics,
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Unified treatment of beam-optics and light polarization.
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- S. A. Khan,
Anomalous moments ... Thomas-BMT ...
- S. A. Khan and R. Jagannathan,
Quantum theory of aberrations in charged-particle beam optics.
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A diffraction model for the beam halo problem.
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Integer Sequences

<http://www.research.att.com/~njas/sequences/>, <http://NeilSloane.com/>
<http://oeis.org/>, <http://www.oeisf.org/>
<http://SameenAhmedKhan.webs.com/integer-sequences.html>

- **Integer Sequences in Resistor Networks:**
 Sequence A174283, Sequence A174284, Sequence A174285, Sequence A174286, Sequence A176497, Sequence A176498, Sequence A176499, Sequence A176500, Sequence A176501 and Sequence A176502.
- **Integer Sequences for Primes in Arithmetic Progression:**
 Sequence A206037, Sequence A206038, Sequence A206039, Sequence A206040, Sequence A206041, Sequence A206042, Sequence A206043, Sequence A206044, Sequence A206045, Sequence A227281, Sequence A227282, Sequence A227283, Sequence A227284, Sequence A227285 and Sequence A227286.
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Patents

1. 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_jour

<http://www.patentoffice.nic.in/>, <http://www.ipindia.nic.in/>

(*patent in process*, <http://SameenAhmedKhan.webs.com/quadricmeter.html>).

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.

2. Sameen Ahmed Khan,
Conicmeter.
(patent in process, <http://SameenAhmedKhan.webs.com/conicmeter.html>).