

S. K. TYAGI, Ph. D.

Present Address

School of Infrastructure Technology & Resource Management, Shri Mata Vaishno Devi University, Katra 182320 (J&K)

INDIA

E-mail: sudhirtyagi@yahoo.com; sktiitd@gmail.com;

Ph: +91-1991-285535 ext.2364



OBJECTIVE

To be an integrated part of a dynamic & motivated academic community and to make fruitful & distinguished contributions in teaching and research (R & D) activities

RESEARCH FIELD & ACTIVITIES

Extensive multidisciplinary research (Energy Studies, Heat Transfer, Exergy, Irreversible Thermodynamics, Building Engineering, Refrigeration, and Physics) experience for more than 14 years, which can be summarize in the following specializations:

- Sea water source cascade heat pump system for heating and cooling applications
- Vapor absorption refrigeration systems for cold storage applications
- Vapor compression-absorption hybrid heat pump for industrial waste heat recovery
- PCM based thermal energy storage for waste recovery and heating/cooling applications using vapor compression-absorption hybrid heat pump
- Design improvements, modifications and analysis of hybrid absorption/compression heat pump using ammonia-water as the working fluid
- Control of plume (white fog) from cooling towers of commercial buildings and industries
- Thermoeconomics and exergoeconomics of solar thermal power generation and thermal energy systems.
- Finite time thermodynamic, energy and exergy analyses of thermal energy conversion systems
- Cogeneration and analyses of power cycles, refrigeration and heat pump systems
- Endoreversible and irreversible cycle viz. Rankine, Brayton, Stirling and Ericsson heat engines and refrigeration cycles
- Solar water heating and solar cookers
- Energy and exergy analysis of solar thermal power generation and solar collectors.
- Analysis and testing of Scheffler-type community size solar cooker

TEACHING & ACADEMIC ACTIVITIES

- Solar Refrigeration and Air Conditioning (Ph. D. & M. Tech. Energy Management)
- Cogeneration and Energy Efficiency (Ph. D. & M. Tech. Energy Management)
- Non Conventional Energy Sources (M. Tech. Energy Management)
- Principles of Energy Conversion (M. Tech. Energy Management)
- Refrigeration & Air Conditioning (B. Tech. Mechanical Engineering)
- Heat and Mass Transfer (B. Tech. Mechanical Engineering)

MEMBERSHIP OF PROFESSIONAL BODIES

- American Society of Heating, Refrigeration and Air-conditioning Engineers (ASHRAE)
- International Solar Energy Society (ISES)
- International Society for Energy Materials (ISEM)
- Indian National Science Congress (INSC)
- Indian Physics Association (IPA)
- Solar Energy Society of India (SESI)

HONOURS/AWARDS/FELLOWSHIP

- Post Doctoral Fellowship, Japan Society for the Promotion of Science (JSPS), Japan (2008, Offered)
- Brain Pool Fellowship: Korea Foundation of Science & Technology (KOFST) South Korea (April, 2007)
- Post Doctoral Fellowship: University Grant Commission (UGC) Hong Kong, SAR (April, 2005)
- Post Doctoral Fellowship: National Natural Science Foundation of China, Hangzhou (Zhejiang) China (Nov. 2004)
- Post Doctoral Fellowship: National Natural Science Foundation of China, Xiamen (Fujian) China (Oct. 2002)
- Research Associate: Council of Scientific & Industrial Research (CSIR), New Delhi, India (July, 2002)

EDITORSHIP (Associate Editor. <http://www.istpress.com/editorialBoard.html>)

- [RSE] IST Transactions of Renewable and Sustainable Energy
- [ESTA] IST Transactions of Environmental Systems-Theory and Applications
- [MSTA] IST Transactions of Mechanical Systems-Theory and Applications

RESEARCH/ACADEMIC EXPERIENCE

Nov. 2008 to Present	Assistant Professor School of Infrastructure Technology & Resource Management Shri Mata Vaishno Devi University, Katra 182320 (J&K) India
May, 2007 to Oct. 2008	Brain Pool Scientist Department of Renewable Energy Korean Institute of Energy Research Yuseong 305343, Daejeon South Korea
April, 2005 to April, 2007	Post Doctoral Research Fellow Building Services Engineering, The Hong Kong Polytechnic University, Kowloon Hong Kong
Nov. 2004 to April, 2005	Post Doctoral Research Fellow, Institute of Refrigeration & Cryogenics Zhejiang University, Hangzhou 310027, Zhejiang People's Republic of China
October 2002 to October 2004	Post Doctoral Research Fellow School of Physics, Mechanical & Electrical Engineering Xiamen University, Xiamen 361005, Fujian People's Republic of China
April, 2002 to Oct., 2002	Project Associate Centre for Energy Studies Indian Institute of Technology, Delhi India.
April, 2001 to April, 2002	Software Developer Harmonic Software Patterns (P) Ltd. Raj Nagar, Ghaziabad (Utter Pradesh) India.

March, 2000 to April, 2001 Senior Research Fellow
Centre for Energy Studies
Indian Institute of Technology, Delhi
India.

Nov., 1999 to March, 2000 Project Assistant
Centre for Energy Studies
Indian Institute of Technology, Delhi
India.

Sept., 1997 to June, 1999 Junior Research Fellow
Centre for Energy Studies
Indian Institute of Technology, Delhi
India.

July 1995 to August 1997 Part Time Research Fellow
Department of Physics
L. R. College, Sahibabad, Ghaziabad (UP)
India.

EDUCATION

Post Doctorate, 2002-2007 (three Times) from Hong Kong & P. R. of China

Ph. D. 2002, Centre for Energy Studies, Indian Institute of Technology (IIT) Delhi & C
C. S. University, Meerut (UP) India

Title of Thesis *“Application of Finite Time Thermodynamics and Second Law
Evaluation of Thermal Energy Conversion Systems”*

M. Sc. 1995, Physics (Electronics) CCS. University, Meerut (UP) India

B. Sc. 1993, Physics, Chemistry, Mathematics, CCS University, Meerut (UP) India

SUPERVISION OF THESES

(A) DOCTOR OF PHILOSOPHY

Student: Adarsh Kumar Pandey

Title: Exergy Analysis and Exergoeconomics of Renewable Energy Systems (Since,
Nov. 2009)

School of Infrastructure Technology & Resource Management, Shri Mata Vaishno Devi
University, Katra 182320 (J&K) India

Supervisor(s): S. K. Tyagi and P. C. Pant

Student: V. Shiva Reddy

Title: Analysis and Optimization of Energy Conversion Systems (Since Oct. 2009).
Centre for Energy Studies, Indian Institute of Technology, Delhi (Since, Aug. 2009)

Supervisor(s): S. C. Kaushik and **S. K. Tyagi**

Student: Sanjeev Anand

Title: Modeling, Simulation and Performance Evaluation of Vapor-Compression-Absorption (VAC) Hybrid Refrigeration System (Since Dec.2008).

School of Infrastructure Technology & Resource Management, Shri Mata Vaishno Devi University, Katra 182320 (J&K) India

Supervisor(s): **S. K. Tyagi** and S. C. Kaushik

(B) MASTER OF TECHNOLOGY

Student(s): Vandana Patyal

Title: Energy Generation and Pollution Control by Upflow Anaerobic Sludge Blanket (UASB) treatment of distillery waste water (In Process, 2009)

School of Infrastructure Technology & Resource Management, Shri Mata Vaishno Devi University, Katra 182320 (J&K) India

Supervisor(s): **S. K. Tyagi**

Student(s): Arun Bangotra, Anshul Mahajan and Anshu Gupta

Title: Fabrication and Performance Study of 1 TR VAR System (In Process, June, 2009)

School of Infrastructure Technology & Resource Management, Shri Mata Vaishno Devi University, Katra 182320 (J&K) India

Supervisor(s): **S. K. Tyagi**, Sanjeev Anand

Student(s): Davinder Singh, Vinod Khajuria and Puneet Magoo

Title: Performance study of IC engines (In Process, June, 2009)

School of Infrastructure Technology & Resource Management, Shri Mata Vaishno Devi University, Katra 182320 (J&K) India

Supervisor(s): **S. K. Tyagi**, Sanjeev Anand

Student(s): Kulbhushan Sharma and Pranav Mahajan

Title: Performance analysis and experimental study of box and parabolic type solar cookers, (Dec. 2008)

School of Infrastructure Technology & Resource Management, Shri Mata Vaishno Devi University, Katra 182320 (J&K) India

Supervisor(s): S. K. Tyagi, D. Giridhar, and V. V. Tyagi

Student(s): Sahil Kesar and Rahul Gupta

Title: Analysis and experimental study of solar water heating systems for a typical Indian climate, (Dec. 2008)

School of Infrastructure Technology & Resource Management, Shri Mata Vaishno Devi University, Katra 182320 (J&K) India

Supervisor(s): S. K. Tyagi, D. Giridhar and V. V. Tyagi

Student(s): Rajesh Arora

Title: Finite time thermodynamic and ecological optimization of Brayton heat engine cycle (June, 2008).

Centre for Energy Studies, Indian Institute of Technology, Delhi, India.

Supervisor(s): S. C. Kaushik and S. K. Tyagi

Student(s): Prasun Bhargava

Title: Testing & Modeling Studies on Multi-Stage Cascaded Thermo-Electric Generators & Refrigerators, (June. 2007).

Centre for Energy Studies, Indian Institute of Technology, Delhi, India.

Supervisor(s): S. C. Kaushik and S. K. Tyagi

Student(s): Amit Kumar Sharma

Title: Thermodynamic optimization of Energy Conversion Systems, (May. 2005)

Centre for Energy Studies, Indian Institute of Technology, Delhi, India.

Supervisor(s): S. C. Kaushik and S. K. Tyagi

Student(s): Vivek Tiwari

Title: Finite time thermodynamic analysis of gas turbine power cycles, (Dec. 2002),

Centre for Energy Studies, Indian Institute of Technology, Delhi, India.

Supervisor(s): S. C. Kaushik and S. K. Tyagi

(C) BACHELOR OF TECHNOLOGY

Student(s): Bharat Bhushan and Shankar Kumar

Title: Fabrication and parametric study of solar air dryer (In Process, Nov., 2009)

School of Infrastructure Technology & Resource Management, Shri Mata Vaishno Devi University, Katra 182320 (J&K) India

Supervisor(s): S. K. Tyagi

Student(s): Vikas Chandra and Ramesh Diwedi

Title: Exergetic study of solar air dryer using phase change materials (PCMs) for heating applications (In Process, Nov., 2009)

School of Infrastructure Technology & Resource Management, Shri Mata Vaishno Devi University, Katra 182320 (J&K) India

Supervisor(s): S. K. Tyagi

JOINT RESEARCH PROJECTS UNDERTAKEN/COMPLETED/SUBMITTED

Title: Simulation and Performance Evaluation of Vapor-Compression-Absorption (VCA) Hybrid Refrigeration System for Cooling and Heating Applications

Co-Investigator(s): Sanjeev Anand

Funding: Submitted in May, 2009 to CSIR, New Delhi

Amount: Rs. 58,20,000/-

Title: Research & developments on vapor compression/absorption heat pump cycles using ammonia-water as the working fluid.

Co-Investigator(s): S. R. Park, M. S. Kim

Funding: KOSEF-Korean Industrial Joint Research

Amount: 100,000 USD

Outcome: Completed

Title: Control of visible plume from wet cooling towers in huge commercial buildings in Hong Kong

Co-Investigator(s): S. W. Wang

Funding: UGC, Hong Kong

Amount: 800,000 HKD

Outcome: As Expected

Title: Finite time thermodynamic analysis of thermal cycles

Co-Investigator(s): Jincan Chen

Funding: Natural Science Foundation of Fujian Province, China

Amount: 100,000 RMB

Outcome: As Expected

Title: Investigation on the cycle performance of room-temperature magnetic refrigeration material

Co-Investigator(s): G. X. Lin, Jincan Chen

Funding: Natural Science Foundation of Fujian Province, China

Amount: 40,000 RMB

Outcome: As Expected

LIST OF PUBLICATIONS

(A1): INTERNATIONAL JOURNALS (SCI Journals)

1. **S. K. Tyagi**, S. R. Park, V. V. Tyagi and S. Anand, Second law based performance evaluation and parametric study of a sea water source cascade heat pump, *Int. Journal of Exergy* (In Press, 2010).
2. **S. K. Tyagi**, M. S. Kim, S. R. Park and S. Anand, Effects of ambient temperature on the exergetic performance of a modified vapor absorption/compression hybrid heat pump system using $\text{NH}_3\text{-H}_2\text{O}$ as the working fluid, *Indian Journal of Pure & Applied Physics* (In Press, 2010).
3. **S. K. Tyagi**, Q. Wang, P. Xia, and G. M. Chen, Finite-resources optimization of an irreversible Carnot refrigerator working between two heat reservoirs, *Int. Journal of Exergy*, Vol. 7, (2010) pp.76–88.
4. **S. K. Tyagi**, S. R. Park, V. V. Tyagi and S. Anand, Economic considerations and cost effectiveness among different possible options to control the visible plume from wet cooling tower in commercial buildings, *Indian Journal of Pure & Applied Physics*. Vol.47 (2009) pp.597-608.
5. **S. K. Tyagi**, S. W. Wang, S. R. Park and A. Sharma, Economic Considerations and Cost Effectiveness of the Heat Pumps and Solar Collectors for the Control of Visible Plume from Wet Cooling Towers in a Commercial Building, *Renewable and Sustainable Energy Reviews*, Vol. 12 (2008) pp.2194-2210.
6. C. R. Chen, A. Sharma, **S. K. Tyagi** and D. Buddhi, Numerical Heat Transfer Studies on PCMs used in a Box Type Solar Cooker, *Journal of Renewable Energy*, Vol.33 (2008) pp.1121-1129.
7. **S. K. Tyagi**, S. W. Wang and S. R. Park, Performance Criteria on Different Pressure Ratios of an Irreversible Modified Complex Brayton Cycle, *Indian Journal of Pure & Applied Physics*, Vol. 46 (2008) pp-565-574.

8. **S. K. Tyagi**, W. Wang, S. C. Kaushik, M. K. Singhal and S. R. Park, Exergy Analysis and Parametric Study of Concentrating Type Solar Collectors, *Int. Journal of Thermal Sciences*, Vol. 46 (2007) pp.1304–1310
9. **S. K. Tyagi**, S. W. Wang and Z. J. Ma, *The Prediction, potential and control of plume from cooling towers at a commercial building in Hong Kong: A case study*, *Int. Journal of Energy Research*, Vol. 31 (2007) pp.778-795
10. **S. K. Tyagi**, and S. W. Wang, Atul Sharma and S. C. Kaushik, Application of Solar Collectors to Control the Plume from Wet Cooling Towers in a Commercial Building: A Case Study, *Applied Thermal Engineering*, Vol. 27 (2007) 1394–1404.
11. **S. K. Tyagi**, S. W. Wang, H. Chandra, G. M. Chen, Q. Wang and C. Wu, *Performance investigations under maximum ecological and maximum economic conditions of complex Brayton cycle*, *Int. Journal of Exergy*, Vol.4 (2007) pp.98-116.
12. **S. K. Tyagi**, G. M. Chen, Q. Wang and S. C. Kaushik, *A new thermoeconomic approach and parametric study of irreversible regenerative Brayton refrigeration cycle*, *Int. Journal of Refrigeration*, Vol.29 (2006) pp.1167-1174.
13. S. K Tyagi, S. W. Wang and S C Kaushik, Irreversible modified complex Brayton cycle under maximum economic condition, *Indian Journal of Pure & Applied Physics*, Vol. 44 (2006) pp.592-601.
14. **S. K. Tyagi**, G. M. Chen, Q. Wang and S. C. Kaushik, *Thermodynamic analysis and parametric study of an irreversible regenerative-intercooled-reheat Brayton cycle heat engine*, *Int. Journal of Thermal Sciences*, Vol.45 (2006) pp.829-840.
15. **S. K. Tyagi**, Guoxing Lin, Jincan Chen and S. C. Kaushik, *Ecological optimization of irreversible Ericsson cryogenic refrigerator cycle*, *Int. Journal of Energy Research*, Vol.29 (2005) pp.1191-1204.
16. **S. K Tyagi**, J. Chen G Lin, S C Kaushik. Effect of several irreversibilities on the thermoeco-nomic performance of a realistic Brayton heat engine cycle. *Indian Journal of Pure & Applied Physics*, Vol. 43(8) (2005) pp.612-619
17. **S. K. Tyagi**, Jincan Chen, S. C. Kaushik, V. Tiwari and Chih Wu, *Effects of several major irreversibilities on the thermodynamic performance of an irreversible regenerative MHD power cycle*, *ASME Journal of Energy Res. Tech.* Vol.127 (2005) pp.103-118.
18. **S. K. Tyagi**, J. Chen, G. Lin and S. C. Kaushik, Thermoeconomic optimization and parametric study of irreversible Ericsson heat engine cycle, *Int. Journal of Thermodynamics*, Vol.7 (2005) pp.189-198.

19. **S. K. Tyagi**, Jincan Chen and S. C. Kaushik, Optimal criteria based on the ecological function of an irreversible intercooled regenerative modified Brayton cycle, *Int. Journal of Exergy*, Vol. 2 (2005) pp.90-107.
20. **S. K. Tyagi**, G. Lin, S. C. Kaushik and J. Chen, *Thermoeconomic optimization and parametric study of irreversible Stirling cryogenic refrigerator cycle*, *Int. Journal of Refrigeration*, Vol.27 (2004) 924-927.
21. Yinghui Zhou, **S. K. Tyagi**, and Jincan Chen, *The optimal performance of an irreversible Braysson heat engine cycle*, *Int. Journal of Thermal Sciences*, Vol.43 (2004) pp.1101-1106.
22. **S. K. Tyagi**, Jincan Chen and S. C. Kaushik, *Thermoeconomic optimization and parametric study of an irreversible Stirling heat pump cycle*, *Int. Journal of Thermal Sciences*, Vol.43 (2004) pp.105-112.
23. S. C. Kaushik, **S. K. Tyagi** and M. K. Singhal, *Parametric study of an irreversible regenerative Brayton cycle with isothermal heat addition*, *Energy Convers. Mgmt.*, Vol.44 (2003) pp.2013-2025.
24. **S. K. Tyagi**, S. C. Kaushik and R. Salhotra, *Ecological optimization and parametric study of irreversible Ericsson and Stirling heat engines*, *Journal of Phys D: Appl. Phys.*, Vol.35 (2002) pp.2668-2675.
25. S. C. Kaushik, **S. K. Tyagi** S. K. Bose and M. K. Singhal, *Evaluation of irreversible Ericsson and Stirling heat pump cycles*, *Int. Journal of Thermal Sciences*, Vol.41 (2002) pp.193-200.
26. **S. K. Tyagi**, S. C. Kaushik and M. K. Singhal, *Evaluation of irreversible Ericsson and Stirling cryogenic refrigerator cycles*, *Energy Convers. Mgmt.*, Vol.43 (2002) pp.2297-2309.
27. **S. K. Tyagi**, S. C. Kaushik and R. Salhotra, *Ecological optimization study of irreversible Ericsson and Stirling heat pump cycles*, *Journal of Phys D: Appl. Phys.*, Vol.35 (2002) pp.2058-2065.
28. S. C. Kaushik and **S. K. Tyagi** (S. Kumar), *Finite time thermodynamic evaluation of irreversible Ericsson and Stirling heat engines*, *Energy Convers. Mgmt.*, Vol.42 (2001) pp.295-312.
29. S. C. Kaushik and **S. K. Tyagi** (S. Kumar), *Finite time thermodynamic analysis of endoreversible Stirling heat engine with regenerative losses*, *Energy-The International Journal*, Vol.25 (2000) pp.989-1003.

(A2): INTERNATIONAL JOURNALS (EI Journals)

30. **S. K. Tyagi**, Optimum criteria based on different pressure ratios of an irreversible regenerative complex Brayton cycle, *Int. J. of Sustainable Energy* (In Press, 2009).

31. **S. K. Tyagi**, V. V. Tyagi, S. Anand, V. Chandra, and R. K. Diwedi First and second law analyses of a typical solar dryer: A case study, *Int. Journal of Sustainable Energy*, Vol.29 (2010) pp.8-18.
32. **S. K. Tyagi**, *Effects of intercooling on the performance of a realistic regenerative Brayton heat engine cycle*, *Int. Journal of Sustainable Energy* Vol.28 (2009) pp.231-245.
33. **S. K. Tyagi**, S. R. Park, and S. W. Wang, Economic and thermodynamic analysis and cost comparison among different heating system to control the visible plume from wet cooling towers, *Int. Journal of Ambient Energy*, Vol.29 (2008) pp.93-114.
34. **S. K. Tyagi**, S. W. Wang and S. C. Kaushik, *Investigations on a Complex Brayton Cycle under Maximum Economic and Maximum Thermodynamic Conditions*, *Int. Journal of Ambient Energy* (2007) pp.151-163.
35. **S. K. Tyagi**, Jincan Chen and S. C. Kaushik, *Effects of the intercooling on the performance of an irreversible regenerative modified Brayton cycle*, *Int. Journal of Power and Energy Systems* Vol. 27 (2007) pp.56-64.
36. **S. K. Tyagi**, S. W. Wang, G. M. Chen, H. X. Han and S. C. Kaushik, Optimal criteria for different parameters of an irreversible regenerative intercooled Brayton cycle under maximum power and maximum ecological COP conditions, *Int. Journal of Ambient Energy*, Vol.27 (2006) pp.37-51.
37. **S. K. Tyagi** and Jincan Chen, Performance evaluation of an irreversible regenerative modified Brayton heat engine cycle based on thermoeconomic criterion, *Int. Journal Power and Energy Systems*, Vol.26 (2005) pp.66-74.
38. **S. K. Tyagi**, J. Chen and S. C. Kaushik, *Optimization on the thermoeconomic performance of a regenerative MHD power cycle affected by multi-irreversibilities*, *Int. Journal of Ambient Energy*, Vol.26 (2005) pp.191-202.
39. **S. K. Tyagi**, Jincan Chen and S. C. Kaushik, *The performance characteristics of a realistic regenerative inter-cooled Brayton cycle at maximum thermoeconomic function*, *Int. Journal of Ambient Energy*, Vol.26 (2005) pp.155-168.
40. **S. K. Tyagi** and S. C. Kaushik, *Ecological optimization of an irreversible regenerative intercooled Brayton heat engine with direct heat loss*, *Int. Journal of Ambient Energy*, Vol.26 (2005) pp.81-92.
41. Yinghui Zhou, **S. K. Tyagi**, Chih Wu and Jincan Chen, *General optimum characteristics on the performance of an irreversible Brayton heat engine cycle*, *Int. Journal of Ambient Energy*, Vol.26 (2005) pp.37-44.
42. Jincan Chen, **S. K. Tyagi** and Chih Wu, *Optimal design on the performance parameters of an irreversible Carnot heat engine based on the thermoeconomic approach*, *Int. Journal of Ambient Energy* Vol.24 (2003) 201-206.

43. S. C. Kaushik, **S. K. Tyagi** and S. Mohan, *Performance evaluation of an irreversible Stirling heat engine*, Int. Journal of Ambient Energy Vol.24 (2003) pp.149-156.
44. S. C. Kaushik and **S. K. Tyagi** *Finite time thermodynamic analysis of a nonisentropic regenerative closed cycle Brayton heat engine*, Int. Journal of Solar Energy, Vol.22 (2002) pp.141-151.
45. **S. K. Tyagi**, Yinghui Zhou and Jincan Chen, Optimum criteria on the performance of an irreversible Braysson heat engine based on the new thermoeconomic approach, Entropy-An Int. Journal, Vol.6 (2004) pp.244-256.
46. B. Lin, **S. K. Tyagi** and J. Chen, Optimization on the performance of an irreversible Brayton refrigerator cycle, Chinese Journal of Refrigeration, Vol.104 (2004), pp.42-44 (In Chinese).
47. **S. K. Tyagi**, S. C. Kaushik and V. Tiwari, *Ecological optimization and parametric study of an irreversible regenerative Brayton heat engine with isothermal heat addition*, Entropy-An Int. Journal, Vol.5 (2003) pp.377-390.

(B2): NATIONAL JOURNALS

48. S. C. Kaushik N. Singh and **S. K. Tyagi** (S. Kumar), Thermodynamic evaluation of a modified steam regenerative Brayton cycle for solar thermal power generation, Journal of Solar Energy Society of India, Vol.9 (1999) pp.63-75.
49. S. C. Kaushik, **S. K. Tyagi** (S. Kumar) and A. Khaliq, Application of finite time thermodynamics to refrigeration and air-conditioning systems, Journal of Energy Opportunities, Vol.13 (1998) pp.15-17.
50. S. C. Kaushik, N. Singh and **S. K. Tyagi** (S. Kumar), Assessment of solar thermal power generation-an overview, Journal of Energy Opportunities, Vol.12 (1997) pp.9-12.

(C1): INTERNATIONAL CONFERENCES

51. **S. K. Tyagi**, J. H. Lee and, K.C. Chang and S. R. Park, Exergy analysis and parametric study of a sea water source heat pump, 7th International Conference on Sustainable Energy Technology, August, 24-27, 2008, Seoul, Korea.
52. **S. K. Tyagi**, M. S. Kim, H. S. Ra, J. H. Kim and S. R. Park, Performance evaluation and experimental investigations of a modified hybrid vapor compression/absorption heat pump system for real life applications using NH₃-H₂O as the working fluid, 9th IEA Conference, May, 22-24, 2008, Zurich, Switzerland.
53. **S. K. Tyagi**, V. V. Tyagi, S. R. Park and S. C. Kaushik, Economic considerations and cost comparisons among different possible options to control the visible plume

- from wet cooling tower in commercial buildings, Proceedings of International 3-e GIBC Conference, Oct. 2007, Taiwan.
54. S. K. Tyagi, S. W. Wang and S. R. Park, Cost Effectiveness and Thermodynamic Analysis for the Application of Solar Collector and Heat Pump to Control the Visible Plume from Wet Cooling Towers of Commercial Buildings in Hong Kong, Proceedings of IEEE-3 Conference, July - 2007, Avora, Portugal.
55. **S. K. Tyagi**, J. Chen and Ben Hua, *Performance evaluation and parametric study of irreversible Carnot heat pump and refrigerator cycles*, Proceedings of 3rd International Symposium on Heat Transfer Enhancement and Energy Conservation, January, 2004, Guangzhou, China, pp.1086-1091.
56. S. C. Kaushik and **S. K. Tyagi** (S. Kumar), *Finite time thermodynamic evaluation of irreversible Ericsson and Stirling heat pump cycles*, 4th International Conference on Heat Pipes and Heat Pumps Systems, Sept., 2000, Minsk (Belarus) pp.113-126

(C2): NATIONAL CONFERENCES

57. V. Chandra, R. C. Diwedi, S. Anand, & **S K Tyagi**, Optimum utilization of renewable energy sources to control the visible plume from wet cooling towers, National Renewable Energy Conference, Nov. 5-7, 2009, Jodhpur, India
58. R.C. Diwedi, V. Chandra & **S K Tyagi**, Energy and exergy analyses of a solar air dryer, National Renewable Energy Conference, Nov. 5-7, 2009, Jodhpur, India.
59. **S. K. Tyagi**, S. R. Park and S. Anand, Second Law Analysis of a Hybrid Heat Pump System for Waste Heat Recovery, National Renewable Energy Conference, Nov. 5-7, 2009, Jodhpur, India
60. S. Kesar, R. Gupta, V. V. Tyagi and **S. K. Tyagi**, Performance analysis of solar cooker for rural India, B. B. Conference Jan.31-Feb.02, 2009.
61. K. Sharma, P. Mahajan, V. V. Tyagi and **S. K. Tyagi**, Experimental investigations and performance analysis of solar water heating systems for a typical Indian climate, B. B. Conference, Jan.31-Feb.02, 2009.
62. B. Lin, **S. K. Tyagi** and J. Chen, *Optimization on the performance of an irreversible Brayton refrigerator cycle*, Chinese Annual Academic Meeting on Refrigeration and Air-conditioning, October, 2004, Xi'an, China (In Chinese).
63. **S. K. Tyagi**, S. C. Kaushik and B. K. Tyagi, *Thermodynamic Evaluation Regenerative Closed Cycle Brayton Heat Engine with isothermal heat addition*, National Renewable Energy Convention 2000 IIT, Bombay, India.

(D): PAPERS COMMUNICATED

64. **S. K. Tyagi**, V. V. Tyagi S. Anand, I. Verma and V. Chandra, Comparative study between conventional and nonconventional heating sources for the abatement of visible plume in wet cooling towers, *Int. Journal of Thermal Sciences* (Communicated, 2009)
65. **S. K. Tyagi** and V. V. Tyagi, Exergetic study of a thermosiphon solar water heating system, *Int. Journal of Exergy* (In Process, 2009)
66. **S. K. Tyagi** and V. V. Tyagi, Comparative technical and economical study of solar cookers for typical Indian climatic zones, *Renewable Energy* (In Process, 2009, 2009).
67. **S. K. Tyagi** and S. Anand, Economical optimization and reduction of heat transfer losses from steam pipes using different insulation: A case study, *Journal of Thermodynamics* (Communicated, 2009).
68. **S. K. Tyagi**, J. Chen and C. Wu, Optimal criteria of an irreversible regenerative intercooled Brayton cycle under maximum power and maximum efficiency conditions, *Int. Journal of Green Energy* (Communicated, 2007).

(E): TECHNICAL REPORTS

1. Thermoeconomic and exergy analysis of hybrid VAR and VCR systems, Final Report, Korea Foundation of Science and Technology Societies and Korea Institute of Energy Research, Oct. 2008, South Korea
2. *Prediction, potential and control of plume from cooling towers at a commercial building in Hong Kong*, Technical Report, The Hong Kong Polytechnic University, Hong Kong, April- 2006.
3. *Thermoeconomic and Thermodynamic Analysis of Energy Conversion Cycles*, Post Doctoral Report, Institute of Refrigeration & Cryogenics, Zhejiang University, Hangzhou People's Republic of China, May - 2005.
4. *Analysis of Energy Conversion Systems Using the Concept of Finite Time Thermodynamic and Thermoeconomic*, Post Doctoral Report, School of Physics, Mechanical & Electrical Engineering, Xiamen University, Xiamen, People's Republic of China, October-2004.
5. *Solar Collector Technologies for Power Generation and Space Air Conditioning Applications: A State of the Art*, Internal Report, Centre for Energy Studies, Indian Institute of Technology, Delhi India, December-2001.

APPENDIX

A1: Additional Qualifications

1. Introduction to University Teaching, Teaching and Learning Process Level-2, Semester One-2006, Department of Educational Development Centre (EDC), The Hong Kong Polytechnic University.
2. Introduction to University Teaching, Preparing to Teach, Level-1, Semester One, 2005, Department of Educational Development Centre (EDC), The Hong Kong Polytechnic University.

A2: Teaching Workshops/Series/Courses

1. Creating grading criteria for intended learning outcomes of students' portfolio, March, 21, 2006, Department of Educational Development Centre (EDC) The Hong Kong Polytechnic University, Hong Kong.
2. Creating grading criteria for intended learning outcomes of students' oral presentation, March, 24, 2006, EDC, The Hong Kong Polytechnic University, Hong Kong.
3. Improving English for teaching purposes, Session-A, May 11, 2006, EDC, The Hong Kong Polytechnic University, Hong Kong.
4. Creating teachable moments for students, May 12, 2006, EDC, The Hong Kong Polytechnic University, Hong Kong.
5. Seminar series on excellence teachings on teaching excellence-when happiness find teaching and teaching find happiness, May 17, 2006, EDC, The Hong Kong Polytechnic University, Hong Kong.
6. Designing good assessment tasks to motivate students to learn and to track their thinking, May 23, 2006, EDC, The Hong Kong Polytechnic University, Hong Kong.
7. Improving English for teaching purposes, Session-B, May 25, 2006, EDC, The Hong Kong Polytechnic University, Hong Kong.
8. Developing criteria and standards for assessing creative thinking, May 26, 2006, EDC, The Hong Kong Polytechnic University, Hong Kong.
9. Learning scenarios for overcoming challenges-helping students preparing assignments session-A, May 15, 2006, EDC, The Hong Kong Polytechnic University, Hong Kong.
10. Learning scenarios for overcoming challenges-helping students preparing assignments session-B, May 29, 2006, EDC, The Hong Kong Polytechnic University, Hong Kong.
11. An evolution for assessment criteria: Enhancing students motivation for learning, May 30, 2006, EDC, The Hong Kong Polytechnic University, Hong Kong

12. Developing Criteria and Standard for Assessing Critical Thinking Ability, June, 6 2006, EDC, The Hong Kong Polytechnic University, Hong Kong.
13. The HOW and WHY series- Workshop, May-July, 2006, EDC, The Hong Kong Polytechnic University, Hong Kong.

A3: Invited Talks/Lectures

1. Economic Considerations and Cost Comparisons among Different Possible Options to Control the Visible Plume from wet Cooling Tower in Commercial Buildings, Mechanical Engineering Department. Kun Shan University (Tainan) Taiwan Oct. 2007.
2. Different Modes of Heat Transfer in the Materials, Department of Educational Development Centre, The Hong Kong P Polytechnic University, Hong Kong, Oct. 2006.
3. Quality of Energy, Heat and Exergy, Department of Educational Development Centre, The Hong Kong Polytechnic University, Hong Kong, Oct. 2005.
4. Finite Time Thermodynamics and its Applications to Thermal Energy Conversion Systems, Department of Building Services Engineering, The Hong Kong Polytechnic University, Hong Kong, May 2005.

A4: Other Contributions

Reviewer of the following Journals:

1. International Journal of Thermal Sciences
2. Internal Journal of Energy Research
3. Applied Thermal Engineering
4. International Journal of Heat and Mass Transfer
5. Energy-The International Journal
6. International Journal of Refrigeration
7. Journal of Power and Energy
8. Journal of Oil & Gas Science and Technology
9. Journal of Thermophysics and Heat Transfer
10. International Communication in Heat and Mass Transfer
11. Energy Conversion and Management
12. Entropy-An International Journal
13. International Journal of Exergy
14. Proceedings of the Institution of Mechanical Engineers, Part A, Journal of Power and Energy
15. Journal of Power Sources

16. International Journal of Mathematical Engineering
17. Journal of Energy and Fuels
18. International Journal of Sustainable Energy
19. International Journal of Water Resources and Environmental Engineering

Computer Skill

RefProp, EES, TRNSYS, Visual Basic 6.0, C++, FORTRAN, MS-DOS, WINDOWS, MS-Office, MS-Excel, Page Maker, Word Perfect, Power Point etc.

Strengths

Hard working, honest, sincere, maximizing teamwork, taking up the assignment with sincerely, and the ambition of doing great work

Extra Curricular Activities/Hobbies

1. Meditation and yoga.
2. Reading- spiritual literature, books, news paper
3. Sports- badminton, swimming, cricket, table-tennis
4. Cooking- varieties of Indian (pure vegetarian) foods