

LIST OF PUBLICATIONS

I. IN REFEREED JOURNALS

2021

- **Madan Kumar Lakshmanan**, Rene Gislum, *A Chemometric method for the Viability analysis of Spinach Seeds by Near Infrared Reflectance Spectroscopy with variable selection using Successive Projections Algorithm, to be submitted to the Chemometrics and Intelligent Laboratory Systems.* ([Impact Factor: 2.7](#))

2020

- **Madan Kumar Lakshmanan**, T. Chinnu & A. Gopal, *Near-Infrared Reflectance Spectroscopy based Online Moisture measurement in Copra, to be published in Journal of Food Process Engineering*, Wiley Publishers, 2020. ([Impact Factor: 1.955](#))

2018

- Sumon Dey, **Madan Kumar Lakshmanan** and Bala Pesala, *Optimal solar tree design for increased flexibility in seasonal energy extraction*, Renewable Energy 125, 1038-1048. ([Impact Factor 2017: 4.9](#))
- Steffy N Jolly, Vinod Selvaganesh, **Madan Kumar Lakshmanan**, Akhila Kumar Sahu, *Online monitoring of fuel starvation and water management in an operating PEMFC by a novel diagnostic tool based on total harmonic distortion analysis*, Journal of Power Sources Volume 404, 15 November 2018, Pages 81-88. ([Impact Factor 2017: 6.945](#))

2013

- **Madan Kumar Lakshmanan**, Sandilya Bhagi, T. Chinnu and R. Sridhar, *Design and Development of a Robust and Flexible Wireless Sensor Network for Automation of Near Infrared Spectroscopy (NIRS) Based Moisture Sensor*, Journal of the Instrument Society of India (ISOI), Department of Instrumentation, Indian Institute of Science (IISC).

2010

- **Madan Kumar Lakshmanan** and H.Nikookar, *Construction of Optimum Wavelet Packets for Multi-carrier based Spectrum Pooling Systems*, Special Issue Wireless Personal Communications, Volume 54, Issue 1, Page 95, June 2010. (2013 Impact Factor – 0.979)
- **Madan Kumar Lakshmanan** and Dr. H. Nikookar, *UWB-IR Interference Mitigation from Wideband IEEE 802.11a Source using Frequency Selective Wavelet Packets*, Section C: Design, Part V: Communications, Chapter C-V-11 of the book "Principles of Waveform Diversity and Design", SciTech Publishing, August 2010, ISBN: 9781891121951.
- **Madan Kumar Lakshmanan**, D.Karamehmedovic and H.Nikookar, *An Investigation on the Sensitivity of Wavelet Packet Modulation to Time Synchronization Error*, Special Issue Wireless Personal Communications, Springer, 2010. (2013 Impact Factor – 0.979)

2009

- **Madan Kumar Lakshmanan**, I. Budiarjo and H. Nikookar, *Robust Bases for Spectrum Pooling Systems on Wavelet Packet Multi-carrier Modulation MIMO Architecture*, In-Tech book project *Cognitive Radio Systems*, intechweb.org, November 2009, ISBN: 978-953-7619-25-1. (5 Year Impact Factor – 0.579)
- I. Budiarjo, **Madan Kumar Lakshmanan** and H. Nikookar, *Cognitive Radio Dynamic Access Techniques for Mutual Interference Reduction and Efficient Spectrum Utilization*, In-Tech book project *Cognitive Radio Systems*, intechweb.org, November 2009, ISBN: 978-953-7619-25-1. (5 Year Impact Factor – 0.579)

2008

- **Madan Kumar Lakshmanan** and H.Nikookar, *Mitigation of Wideband Interference on UWB-IR Transmission Using Multi-carrier Templates in Frequency Dependent Path Loss Environment*, Journal of the European Microwave Association (EuMA), February 2008. (2013 Impact Factor – 0.57)
- D.Karamehmedović, **Madan Kumar Lakshmanan**, H.Nikookar, *Performance of WPMCM and OFDM in the Presence of Carrier Frequency Offset and Phase Noise*, Journal of Communications (JCM 2008).
- I. Budiarjo, **Madan Kumar Lakshmanan** and H. Nikookar, *Cognitive Radio Dynamic Access Techniques*, Springer International Journal on Wireless Personal Communications special issue on Cognitive Radio Technologies, March, 2008. (2013 Impact Factor – 0.979; **Cited over 50 times**)

2006

- **Madan Kumar Lakshmanan** and H.Nikookar, *A Review of Wavelets for Digital Wireless Communication*, Wireless Personal Communications, Volume 37, Numbers 3-4, May 2006, pp. 387-420(34), Springer. (2013 Impact Factor – 0.979; **Cited 248 times.**)

II. IN CONFERENCE PROCEEDINGS

2019

- Sumon Dey, **Madan Kumar Lakshmanan**, Bala Pesala, “Analysis of Nature Inspired Spirals for Design of Solar Tree”, 7th International Conference on Advances in Energy Research 2019 (ICAER, 2019), IIT Bombay.

2018

- **Madan Kumar Lakshmanan**, Satish Bindal, Chinnu Tharmalingam, Gopal Aruvamuthan, “Near Infrared Spectroscopy based Online measurement of Moisture in Copra Chips”, International Conference on Recent Advances in Food Processing Technology (ICRAFPT 18), Indian Institute of Food Processing Technology (IIFPT), 17-19 August 2018. (**WON BEST POSTER AWARD** out of 650 posters presented)
- **Madan Kumar Lakshmanan**, Satish Bindal, Chinnu Tharmalingam, Gopal Aruvamuthan, “Quality evaluation of Pepper for Adulterants using Chemometric analysis of Near Infrared Signals”, International Conference on Recent Advances in Food Processing Technology (ICRAFPT 18), Indian Institute of Food Processing Technology (IIFPT), 17-19 August 2018.
- **Madan Kumar Lakshmanan**, Satish Bindal, Chinnu Tharmalingam, Gopal Aruvamuthan, *निकटअवरक्त (एनआईआरएस) स्पेक्ट्रोस्कोपी संकेत के विश्लेषण का उपयोग करके काली मिर्च की गुणवत्ता का मूल्यांकन करने के लिए एक नई विधि*, **National Hindi Technical Seminar** On "Technology Vision 2035- Challenges and opportunities", CSIR-SERC, Chennai, 13-14 August 2018.

2017

- Sumon Dey, **Madan Kumar Lakshmanan**, Bala Pesala, “Tuning the Solar Power Generation Curve by Optimal Design of Solar Tree Orientations”, 6th International Conference on Advances in Energy Research 2017 (ICAER, 2017), IIT Bombay.

2015

- **Madan Kumar Lakshmanan**, Kavya Suma, Vishnu Priya Bitra, Sri Harsha, Chinnu Tharmalingam, "Support Vector Machine Classification of Waste Plastics using Near Infrared Spectroscopy Data for Resource Recovery", 5th International Conference on Solid Waste Management (IconSWM 2015), Indian Institute of Science (IISc), Bengaluru, 25-27 November 2015.
- **Madan Kumar Lakshmanan**, Hardeep Mor, Giridhar Subramanian, Chandrasekar Venkataraman, Deepak Srivatsav, Chinnu Tharmalingam, "A Statistical Approach for the Classification of Plastic Polymers using Near Infrared Spectroscopy towards Efficient Waste Management", Indo-German Conference on Sustainability (IGCS), Indian Institute of Technology (IIT-Madras), Chennai, India, 5-6 December 2015.
- **Madan Kumar Lakshmanan** and Beatriz Carrasco, "Powder Blend Uniformity Characterization of Food Additives using Near Infrared Reflectance Spectroscopy", 17th International Conference on Near Infrared Spectroscopy - NIR 2015, Foz do Iguassu, Brazil, 18-23 October 2015.
- **Madan Kumar Lakshmanan** and Beatriz Carrasco, "Study of Near Infrared Reflectance Spectra of Food additives for Batch Homogeneity verification", XV Chemometrics in Analytical Chemistry, 22-26 June 2015, Changsha, China.

2014

- **Madan Kumar Lakshmanan**, Pavan Bopanna, Kalyan Pingali, Nirmal Savio Paul and T. Chinnu, "Design of an Embedded based Control System for efficient sorting of Waste Plastics using Near Infrared Spectroscopy", 2014 IEEE International Conference on Electronics, Computing and Communication Technologies (IEEE CONECCT), Indian Institute of Science (IISc), Bengaluru, 6-7 January 2014.
- **Madan Kumar Lakshmanan** and Gopal Aruvamudan, "A Review of Techniques based on Spectroscopy and Multivariate Analysis for the Authentication of Honey", 5th International Conference on Perspectives in Vibrational Spectroscopy (ICOPVS-2014), 8 - 12 July 2014, Trivandrum, India.
- P. Praveen Samuel, T.Chinnu and **Madan Kumar Lakshmanan**, "Multi-parameter Analysis of Corn using Near-Infrared Reflectance Spectroscopy and Chemometrics", 5th International Conference on Perspectives in Vibrational Spectroscopy (ICOPVS-2014), 8 - 12 July 2014, Trivandrum, India.
- Unnikrishnan.S.Prasad, C.K. Shriram and **Madan Kumar Lakshmanan**, "Open Source Implementation of Chemometric Algorithms for Analysis of Near Infrared Reflectance Spectroscopy Data", 4th Asian NIRS Symposium (ANIRS) 2014 Daegu, South Korea, 17-20 June 2014.
- **Madan Kumar Lakshmanan**, Beatriz Carrasco, S. Unnikrishnan and C.K. Shriram, "Analysis of batch consistency of Food additives using Near-Infrared Reflectance Spectroscopy and Chemometric Techniques", 4th Asian NIRS Symposium (ANIRS) 2014 Daegu, South Korea, 17-20 June 2014.

2013

- **Madan Kumar Lakshmanan**, K. Shankar, Karan H. Shah, T. Chinnu and V. Venkataraman, "Embedded Wireless-enabled Low Cost Plastic Sorting System for efficient Waste Management", **INVITED PAPER**, IEEE Global Humanitarian Technology Conference (IEEE-GHTC), Silicon Valley, California, USA, October-2013.
The same paper was presented at the IEEE Global Humanitarian Technology Conference – South Asian Satellite Conference (IEEE-GHTC-SAS) held at Trivandrum 21-22 August, 2013, where it won the **BEST PAPER AWARD**.
- **Madan Kumar Lakshmanan**, R.Sridhar, T. Chinnu and V.Venkataraman, "On the viability of Near-Infrared Spectroscopy for Online measurement of Oil Content in Coconut cake", 16th International Conference on Near-Infrared Spectroscopy (NIRS-2013), 2–7 June 2013, La Grande-Motte, France.
- R.Sridhar, **Madan Kumar Lakshmanan**, T. Chinnu and V.Venkataraman, "On-line Assay of Moisture Content in Copra Chips through Near-InfraRed Spectroscopy", 16th International Conference on Near-Infrared Spectroscopy (NIRS-2013), 2–7 June 2013, La Grande-Motte, France.

- S. Shankari, T. Chinnu and **Madan Kumar Lakshmanan**, "Authentication of Kumkum (Sindoor) Through Near-InfraRed Spectroscopy and Multivariate Analysis – A Health Care Review", National Seminar on Traditional Knowledge and practises for Sustainable Development, Bhubaneshwar, Orissa.

2011

- **Madan Kumar Lakshmanan**, D.D.Arianand and H. Nikookar, "A Reconfigurable Wavelet Packet Filter Bank Transceiver for Spectral Analysis and Dynamic Spectrum Access ", Fifth IEEE International Symposium on New Frontiers in Dynamic Spectrum Access Networks 2011 (IEEE DySPAN 2011), 3–6 May 2011, Aachen, Germany.
- H. Lu, T. Xu, **Madan Kumar Lakshmanan**, H. Nikookar, "Cooperative Wavelet Communication over Multi-relay, Multi-scale and Multi-lag Wireless Channels", IEEE 73rd Vehicular Technology Conference (IEEE VTC-Spring), 15–18 May 2011, Budapest, Hungary.
- D.D.Arianand, **Madan Kumar Lakshmanan** and H. Nikookar, "A Wavelet Packet Transceiver for Spectral Analysis and Dynamic Spectrum Access", IEEE 73rd Vehicular Technology Conference (IEEE VTC-Spring), 15–18 May 2011, Budapest, Hungary.
- Prasetiyono Hari Mukti, M. K. Lakshmanan, H. Nikookar, "A possibility study on wavelet packet based algorithm for wireless channel representation", 6th International Conference on Telecommunication Systems, Services, and Applications (TSSA), October 2011, Denpasar, Indonesia.

2010

- **Madan Kumar Lakshmanan**, D.D.Arianand and H. Nikookar, "On the Edge Based Artifact Mitigation in Wavelet Packet Transform for Enhancement of Spectral Estimation", **INVITED PAPER**, 3rd International Workshop on Cognitive Radio and Advanced Spectrum Management (COGART) November, 2010, Rome, Italy.
- **Madan Kumar Lakshmanan** and H. Nikookar, "Construction of Optimal Bases for Wavelet Packet Modulation under Phase Offset Errors", 3rd European Wireless Technology Conference, Paris, France, September 2010.
- B.Torun, **Madan Kumar Lakshmanan** and H. Nikookar, "Peak-to-Average Power Ratio Reduction of Wavelet Packet Modulation by Adaptive Phase Selection", 21st International Symposium on Personal, Indoor and Mobile Radio Communications (IEEE PIMRC), September 2010, Istanbul, Turkey.
- **Madan Kumar Lakshmanan**, D.D.Arianand and H. Nikookar, "A Study on the Performance of Wavelet Packets for Spectral Analysis", International Conference on Signal Processing and Communications 2010 (SPCOM-2010), Indian Institute of Science (IISc), Bangalore, India.
- **Madan Kumar Lakshmanan**, H. Nikookar, D. Karamehmedovic, and D. D. Ariananda, "A Unified Framework to Design Orthonormal Wavelets Packet Bases for Multi-Carrier Modulation", Proc. IEEE International Conference on Communications (IEEE ICC) 2010, Cape town, South Africa, May 2010.

2009

- **Madan Kumar Lakshmanan** and H.Nikookar, "Best Bases Selection for Wavelet Domain Communication Systems", International Waveform Diversity and Design (WDD) Conference, February 2009, Orlando, USA.
- D.Karamehmedović, **Madan Kumar Lakshmanan**, H.Nikookar, "Phase Noise Effects on the Performance ofWavelet Packet Multi-carrier Modulation", Wireless VITAE'09, Aalborg, Denmark.
- D.D.Ariananda, **Madan Kumar Lakshmanan**, H.Nikookar, "A Survey on Spectrum Sensing Techniques for Cognitive Radio", Wireless VITAE'09, Aalborg, Denmark. (**Cited over 170 times**)
- **Madan Kumar Lakshmanan**, I.Budiarjo and H. Nikookar, "Wavelet Packet Multi-carrier Modulation MIMO Architecture for Spectrum Pooling Systems", 4th International Conference on Cognitive Radio Oriented Wireless Networks and Communications (IEEE CROWNCOM), Hannover.
- D.D.Ariananda, **Madan Kumar Lakshmanan**, H.Nikookar, "A Study on the Application of Wavelet Packet Transforms to Cognitive Radio Spectrum Estimation", 4th International

Conference on Cognitive Radio Oriented Wireless Networks and Communications (IEEE CROWNCOM), Hannover.

- **Madan Kumar Lakshmanan**, I.Budiarjo and H. Nikookar, "Wavelet Packet Multi-carrier Modulation based Spectrum Pooling Systems with Low Mutual Interference", 70th IEEE Vehicular Technology (IEEE VTC Fall) Conference, 20-23 September 2009 in Anchorage, Alaska.
- D. Karamehmedovic, **Madan Kumar Lakshmanan**, and H.Nikookar, "Optimal Wavelet Design for Multicarrier Modulation with Time Synchronization Error", 52nd Global Communications Conference (IEEE GLOBECOM), November'09, Hawaii, USA.
- D.D.Ariananda, **Madan Kumar Lakshmanan** and H.Nikookar, "An Investigation of Wavelet Packet Transform for Spectrum Estimation", 12th Symposium on Wireless Personal Multimedia Communications (WPMC), September 2009, Sendai, Japan.
- **Madan Kumar Lakshmanan**, D.D.Ariananda and H.Nikookar, "Cognitive Radio Transmission and Spectrum Sensing using a Wavelet Packet Transceiver", 20th Memorial Symposium of Personal, Indoor and Mobile Radio Communications (IEEE PIMRC), Tokyo, Japan, September 2009.
- D.D.Ariananda, **Madan Kumar Lakshmanan**, H.Nikookar, "Design of Best Wavelet Packet Bases for Spectrum Estimation", 20th Memorial Symposium of Personal, Indoor and Mobile Radio Communications (IEEE PIMRC), Tokyo, Japan, September 2009.
- **Madan Kumar Lakshmanan**, B. Torun and H. Nikookar, "Peak-to-average Power Ratio Studies for WaveletPacket Modulation", European Wireless Technology Conference, Rome, Italy, September 2009.
- D.D.Ariananda, **Madan Kumar Lakshmanan**, H.Nikookar, "A Study on Application of Wavelets and Filter Banks for Cognitive Radio Spectrum Estimation", European Wireless Technology Conference, Rome, Italy, September 2009.

2008

- **Madan Kumar Lakshmanan**, I. Budiarjo and H.Nikookar, "Wavelet Packet Multi-carrier Modulation MIMO Based Cognitive Radio Systems with VBLAST Receiver Architecture", IEEE Wireless Communications and Networking Conference (IEEE WCNC), March-April 2008, Las Vegas, USA.
- D.Karamehmedovic, **Madan Kumar Lakshmanan** and H. Nikookar, "Performance of Wavelet Packet Modulation (WPM) and OFDM in the Presence of Time Synchronization Error", 11th International Symposium on Wireless Personal Multimedia Communications, September 2008, Lapland, Finland.
- H. Nikookar and **Madan Kumar Lakshmanan**, "Comparison Of Sensitivity Of OFDM And Wavelet Packet Modulation To Time Synchronization Error", **INVITED PAPER**, 19th Personal, Indoor and Mobile Radio Communications (IEEE PIMRC), September 2008, Cannes, France.
- I.G. Tarsa, **Madan Kumar Lakshmanan**, M.Ruggiano, H.Nikookar and P. van Genderen, "A Study on the Synchronization Problem of OFDM Coded Radar Signal for Communication", 15th Annual Symposium of the IEEE/CVT Benelux Chapter, Antwerp, Belgium.
- D.Karamehmedovic, **Madan Kumar Lakshmanan** and H. Nikookar, "Performance of Wavelet Packet Modulation (WPM) and OFDM in the Presence of Carrier Frequency Offset and Phase Noise", European Wireless Technology Conference, October 2008, Amsterdam.

2007

- **Madan Kumar Lakshmanan** and H.Nikookar, "Mitigation of Interference from Wideband IEEE 802.11a Source on UWB Wireless Communication using Frequency Selective Wavelet Packets", International Waveform Diversity and Design (WDD) Conference, June 2007, Pisa, Italy.
- **Madan Kumar Lakshmanan** and H.Nikookar, "Wavelet Packet Based Strategy to Mitigate Wideband Interference On Impulse Radio", 18th International Symposium on Personal, Indoor and Mobile Radio Communications (IEEE PIMRC), September 2007, Athens, Greece.
- **Madan Kumar Lakshmanan**, I. Budiarjo and H.Nikookar, "Maximally Frequency Selective Wavelet Packets Based Multi-Carrier Modulation Scheme for Cognitive Radio Systems", 50th Global Communications Conference (IEEE GLOBECOM), November 2007, Washington DC, USA.
- **Madan Kumar Lakshmanan** and H.Nikookar, "Optimum Wavelet Packet Construction for Multicarrier-based Cognitive Radio System", The 10th International Symposium on Wireless

Personal Multimedia Communications (WPMC), December 2007, Jaipur, India. (**WON THE BEST STUDENT PAPER AWARD**)

- **Madan Kumar Lakshmanan** and H.Nikookar, "UWB-IR Interference Mitigation Using Multi-carrier Templates in Frequency Dependent Path Loss Environment", European Conference Wireless Technology, October 2007, Munich, Germany.

2006

- **Madan Kumar Lakshmanan** and H.Nikookar, "UWB Interference mitigation using multi-carrier templates", European Conference Wireless Technology, September 2006, Manchester, UK, pp.115 -118.

III. TUTORIALS

- H. Nikookar and **Madan Kumar Lakshmanan**, "Wavelets for Wireless Communication", presented at the 10th International Symposium on Wireless Personal Multimedia Communications, December 2007, Jaipur, India.
- H. Nikookar and **Madan Kumar Lakshmanan**, "Wavelet based Multicarrier Communication Techniques for Cognitive Radios", First International Conference on Wireless VITAE 2009, Aalborg, Denmark.
- H. Nikookar and **Madan Kumar Lakshmanan**, "An Introduction to Wavelets for Cognitive Radio", 12th International Symposium on Wireless Personal Multimedia Communications (WPMC), September 2009, Sendai, Japan.