

## 6 REFERENCES:

- Acharyya, S.S. Ghosh, S. Adak, S. Tripathi D. and Bal, R. "Fabrication of CuCr<sub>2</sub>O<sub>4</sub> Spinel Nanoparticles: A Potential Catalyst for the Selective Oxidation of Cycloalkanes via Activation of C–Sp3–H bond." *Catalysis Communications*, 59(2015) 145-150.
- Aronniemi, M. Sainio, J. and Lahtinen, J. "Chemical State Quantification of Iron and Chromium Oxides using XPS: The Effect of the Background Subtraction Method." *Surface Science*, 578(2005)108–123.
- Bazaki, H. "Mechanism of Combustion of High Energy Solid Rocket Propellant." *Journal of Japan Explosives Society*, 56(1995) 105-111.
- Benjamin, B.F.F. and Alphonse, P. "Co-Mn-oxide Spinel Catalysts for CO and Propane Oxidation at Mild Temperature." *Applied Catalysis B: Environmental*, 180(2016) 715-724.
- Bina, C.K. Kannan, K.G. and Ninan, K.N. "DSC Study on the Effect of Isocyanates and Catalysts on the HTPB Cure Reaction." *Journal of Thermal Analysis and Calorimetry*, 78(2004) 753 - 760.
- Bircomshaw, L. and Newman, B. "Thermal Decomposition of Ammonium Perchlorate." *Proc. R. Soc. A* 227(1955)228–237.
- Bircomshaw, L. and Phillips, T.R. "The Kinetics of Thermal Decomposition of Ammonium Perchlorate." *Journal of Chemical Society*, 12(1957) 4741-4747.
- Boldyrev, V.V. "Thermal Decomposition of Ammonium Perchlorate." *Thermochimica Acta*, 443(2006)1-36.
- Boldyrev, V.V. "Thermal decomposition of ammonium perchlorate". *Thermochim. Acta*, 443(2006)1–36.
- Boldyrev, V.V. Alexandrov, V.V. Boldyreva, A.V. Gristan, V.I. Karpenko, Yu.Ya. Korobeinitchev, O.P. Panfilov, V.N. and Khairetdinov, E.F."On the mechanism of the thermal decomposition of ammonium perchlorate." *Combustion Flame*, 15(1)(1970) 71-77.
- Cancado, L. G. Takai, K. Enoki, T. Endo, M. Kim, Y. A. Mizusaki, H. Speziali, N. L. Jorio, A. and Pimenta, M. A. Carbon, 2008, 46, 272.
- Cesteros, Y. Salagre, P. Medina, F. and Sueiras, J.E. "Preparation and Characterization of Several High-Area NiAl<sub>2</sub>O<sub>4</sub> spinels. Study of Their Reducibility," *Chemical Materials*, 12(2000) 331-335.

- Chandru, R.A. Patra, S. Oommen C. Munichandraiah, N. and Rgahunandan, N. "Exceptional Activity of Mesoporous  $\beta$ -MnO<sub>2</sub> in the Catalytic Thermal Sensitization of Ammonium Perchlorate." *Journal of Materials Chemistry*, 22(2012)6536-6538.
- Chen L. and Zhu, D. "Effects of Different Phase of MnO<sub>2</sub> Nanorods on the Catalytic Thermal Decomposition of Ammonium Perchlorate." *Ceramics International*, 41(2015)7054-7058.
- Chen, L. Li, P. and Li, G. "Synthesis of CuO Nanorods and Their Catalytic Activity in The Thermal Decomposition of Ammonium Perchlorate." *Journal of Alloys and Composites*, 464(2008)532-536.
- Chia, C.H. Zakaria, S. Yusoff, M. Goh, S.C. and Haw, C.Y. "Size and Crystallinity Dependent Magnetic Properties." *Ceramics International*, 36(2010) 605–609.
- Coats, A.W. "Kinetic parameters from thermo-gravimetric data." *Nature*, 201(1964)68-69.
- Crawford, B.L. Hugget, C Daniels, F. Wilfong, R.E. "Direct Determination of Burning Rates of Propellant Powders." *Analytical Chemistry*, 19(1947)630-633.
- Cruise, D.R. "Theoretical Computations of Equilibrium Composition, Thermodynamic Properties, and Performance Characteristics of Propellant Systems." Naval Weapons Center, NWC-TP-6037(1979).
- Dadgaonkar, V.G. Sarwade, D.B. "Effect of Different Additives on the Thermal Decomposition of Ammonium Perchlorate." *Journal of Thermal Analysis*, 36(1990) 223-22.
- Das, Chakraborty B. and Sood, A.K. "Raman Spectroscopy of Graphene on Different Substrate and influence of Defects." *Material Science*, 31(2008)579.
- Davenas, Solid Rocket Propulsion Technology, 1<sup>st</sup> Edition, Pergamon, U.K., 1992.
- De Souza, L.K.C. Zamian, J.R. da Rocha Filho, G.N. Soledade, L.E.B. dos Santos, I.M.G. Souza, A.G. Scheller, T. Angélica, R.S. and Da Costa ,C.E.F. "Blue Pigments Based on Co<sub>x</sub>Zn<sub>1-x</sub>Al<sub>2</sub>O<sub>4</sub> Spinels Synthesized by the Polymeric Precursor Method Dyes Pigment." *Dyes and Pigments*, 81(2009)187-192.
- Devenas, "Solid Rocket Propulsion Technology," Pergamon, Oxford, U.K. (1993).
- Dey, A. Athar, J. Varma, P. Prasant, H. Sider, A.K. and Chttopadhyay, S. "Graphene-Iron oxide Nanocomposite: An Efficient Catalyst for Ammonium Perchlorate (AP) Decomposition and Burn Rate Enhance for AP Based Solid Composite Propellant." *RSC Advances*, 3(2015) 1655-2373.
- Douglass, H.W. "Solid Propellant Processing Factors in Rocket Motor Design." NASA (1971).
- Doyle, C. "Kinetic analysis of Thermo-gravimetric Life from Thermo-gravimetric Data." *Journal of Applied Polymer Science* 5(15)(1961)285-292.

- Doyle, C.D. "Estimating Isothermal Life from Thermo-gravimetric Data." *Journal of Applied Polymer Science* 6(24)(1962)639-642.
- Doyle, C.D. "Series of Approximation to the Equation of Thermo-gravimetric Data." *Nature* 207(1965)290-291.
- Dubey, B.L. Singh, G. and Shukla, C.S. "Effect of Copper Chromite and Copper Chromite Copper Oxide Mixture Catalysts on the Thermal Decomposition of Ammonium Perchlorate and Composite," *Solid Propellant Fuel*, 61(1982) 129-132.
- Dubey, R. Srivastava, P. Kapoor, I.P.S. and Singh, G. "Synthesis, Characterization and Catalytic Behaviour of Cu Nanoparticles on the Thermal Decomposition of AP, HMX, NTO and Composite Solid Propellants." *ThermochimicaActa*, 549(2012)102-109.
- Dupont, N. Kaddouri, A. and Gelin,P. "Physicochemical and Catalytic Properties of Sol-Gel Prepared Copper-Chromium Oxides." *Journal of Sol-Gel Science and Technology*, 58(2011) 302-306.
- Durrani, S.K. Hussain, S.Z. Saeed, K. Khan, Y. Arif, M. and Ahmed, N. "Hydrothermal Synthesis and Characterization of Nanosized Transition Metal Chromite Spinels." *Turkey Journal of Chemistry*, 36(2012) 111-120.
- Eliziário, S.A. De Andrade, J.M. Lima, S.J.G. Paskocimas, C.A. Soledade, L.E.B. Hammer, P. Longo, E. Souza, A.G. Santos, I.M.G. "Black and Green Pigments Based on Chromium–Cobalt Spinels." *Materials Chemistry and Physics*, 129(2011) 619-624.
- Eslami, A. Juibari, N. M. and Hosseini, S.G. "Fabrication of Ammonium Perchlorate/Copper-Chromium Oxides Core-Shell Nanocomposites for Catalytic Thermal Decomposition of Ammonium Perchlorate." *Material Chemistry and Physics*, 181(2016) 12-20.
- Feaviour, M.R. and Schofield, E.M. "Scientific Bases for the Preparation of Heterogeneous Catalysts." *Platinum Metals Review*, 51(2007) 42-44.
- Fernández, L. and Pablo, L. "Formation and the Colour Development in Cobalt Spinel Pigments." *Pigment Resin Technology*, 31(2002) 350-356.
- Ferrari, C. Meyer,J. Scardaci, C. V. Casiraghi, C. Lazzeri, M. Mauri, F. Piscanec, S. Jiang, D. K. Novoselov, S. Roth, S. and Geim, A. K. " Raman Spectrum of Graphene and Graphene Layers," *Physical Review Letter* 97(2006),187401-4.
- Fitzgeral, R.P. and Brewster, M.Q. "Flame and Surface Structure of Laminate Propellants with Coarse and Fine Ammonium Perchlorate." *Combustion Flame* 136(2004)313-326.

- Flynn, J.H and Wall, L.A. "A Quick Direct Method for the Determination of Activation Energy from Thermo-gravimetry Data." *Journal of Applied Polymer Science B Poly Lett.* 4(1966)323-328.
- Fortunato, G. Oswald, H.R. and Reller, A. "Spinel-Type Oxide Catalysts for Low Temperature CO Oxidation Generated by Use of an Ultrasonic Aerosol Pyrolysis Process." *Journal of Material Chemistry*, 11(2000)905-911.
- Friedman, J.H. "Kinetics of Thermal Degradation of Char Forming Plastics from Thermo-gravimetry Application to a Phenolic Plastic." *Journal of Applied Polymer Science Part C* (1964)183-195.
- Fujimura, K. and Miyake, A. "The Effect of Specific Surface area of TiO<sub>2</sub> on the Thermal Decomposition of Ammonium Perchlorate." *Journal of Thermal Analytical Calorimetry*, 99(2010)27-31.
- Fuzhen, Z. Miao, G. Guangying, Z. and Jinlin, L. "Effect of the Loading Content of CuO on The Activity and Structure of CuO/Ce-MnO Catalysts for CO Oxidation." *Journal of Rare Earths*, 330(2015)604-610.
- Galwey, A.K. and Jacobs, P.W.M "High Temperature Thermal Decomposition of Ammonium Perchlorate," *Journal of Chemical Society*, (1959) 837-844.
- Geng, Q.F. Zhao, X. Gao, X.H. Yang, S.R. and G. Liu, "Combustion Synthesis and Characterization of Spinel NiCr<sub>2</sub>O<sub>4</sub>," *Chinese Journal of Inorganic Chemistry*, 28(2012)1979-1984.
- Geng,Q.F. Zhao,X. Gao, X.H. Yang, S.R. and Liu, G. "Low-Temperature Combustion Synthesis Of CuCr<sub>2</sub>O<sub>4</sub> Spinel Powder for Spectrally Selective Paints." *Journal of Sol-Gel Science Technology*, 61(2012) 281-288.
- Gheshlaghi, E.A. Shaabani, B. Khodayari, A. Kalandaragh, Y.A. and Rahimi, R. "Investigation of the Catalytic Activity of Nano-sized CuO, Co<sub>3</sub>O<sub>4</sub> and CuCo<sub>2</sub>O<sub>4</sub> Powders on Thermal Decomposition of Ammonium Perchlorate." *Powder Technology*, 217(2012)330-339.
- Giannakas, A.E. Ladavos, A.K. Armatas, G.S. and Pomonis, P.J. "Surface Properties, Textural Features and Catalytic Performance for NO Plus CO Abatement of Spinels MA<sub>1-x</sub>O<sub>4</sub> (M=Mg, Co And Zn) Developed by Reverse and Bicontinuous Microemulsion Method." *Applied Surface Science*, 253(2007) 6969-6979.
- Giovannetti, G. Khomyakov, P. A. Brocks, G. Karpan, V. Vanden Brink, M. J. and Kelly, P. J. "Doping Graphene with Metal Contacts." *Physical Review Letters*," 101(2008)026803.

- Goldsmithand, J.R. and Aronow, W.S. "Carbon Monoxide and Coronary Heart Disease: A Review." *Journal of Environmental Research*, 10(1975) 236-248.
- Grossman, K.D. Sakthivel, T.S. Dillier, C. Petersen, E.L. and Seal, S. "Effect of Amine-Modified Boron Nitride (BN) on Ammonium Perchlorate Decomposition." *RSC Advance*, 6(2016) 89635-89641.
- Grossman, K.D. Sakthivel, T.S. Dillier, C. Petersen, E.L. and Seal, S. "Highly Ordered Mesoporous Carbon Nitride Nanoparticles with High Nitrogen Content: A Metal-Free Basic Catalyst." *RSC Advances*, 6(2016)89635-89641.
- Guan, X. Li, L. Zheng J. and Li, G. "MgAl<sub>2</sub>O<sub>4</sub> Nanoparticles: A New Low-Density Additive for Accelerating Thermal Decomposition of Ammonium Perchlorate." *RSC Advances*, 1(2011)1808–1814.
- Halaway S.A. and Mohamed, M.A. "The role of MoO<sub>3</sub> and Fe<sub>2</sub>O<sub>3</sub> in the Thermal Decomposition of Ammonium Perchlorate." *Czechoslovak Chemical Communications*, 59(1994)2253-2261.
- Harmony (Makovky), A. and Salmon, A. "The Catalytic Decomposition of Ammonium Perchlorate," Eight Symposium (International) On Combustion." 8(1961)656-662.
- Hedayati, H.R. Sabbagh, A.A. Sameie, H. Salimi, R. Moosakhani, S. Tabatabae F. and AmiriZarandi, A. "Synthesis and Characterization of Co<sub>1-x</sub>Zn<sub>x</sub>Cr<sub>2-y</sub>Al<sub>y</sub>O<sub>4</sub> as a Near-Infrared Reflective Color Tunable Nano-pigment." *Dyes Pigment*, 113(2015) 588-595.
- Hedman, T.D. D.A.R., Cho, K.Y. Groven, L.J. Lucht, R.P. and Son, S.F. "An Experimental Study of the Effects of Catalysts on Ammonium Perchlorate Based Composite Propellant Using 5 kHz PLIF." *Combustion and Flame*,159(2012) 1748-1758.
- Holmes, M.S.M.a.H.E., Subatmospheric Burning Rates and Critical Diameters for AP/HTPB Propellant. 1989, U.S. Army Ballistic Research Laboratory: Aberdeen Proving Ground, Maryland 21005.
- Hosseini, S.A. Alvarez-Galvan, M.C. Fierro, J.L.G. Niaezi, A. and Salari, D. "MCr<sub>2</sub>O<sub>4</sub> (M=Co, Cu, and Zn) Nanospinels for 2-Propanol Combustion: Correlation of Structural Properties with Catalytic Performance and Stability." *Ceramic International*, 39 (2013) 9253-9261.
- Hosseini, S.A. Niaezi, A. Salari, D. Alvarez-Galvan M.C. and Fierro, J.L.G. "Study of Correlation Between Activity and Structural Properties of Cu-(Cr, Mn and Co)(2) Nano Mixed Oxides in VOC Combustion." *Ceramic International*, 40(2014) 6157-6163.
- Hosseini, S.G. Abazari, R. and Gavi, A. "Pure CuCr<sub>2</sub>O<sub>4</sub> nanoparticles: Synthesis, Characterization and Their Morphological and Size Effects on The Catalytic Thermal Decomposition of Ammonium Perchlorate." *Solid State Sciences*, 37(2014)72-79.

- Hu, Y. Dong, L. Wang, J. Ding W. and Chen, Y. "Activities of Supported Copper Oxide Catalysts in The NO+CO Reaction at Low Temperatures." *Journal of Molecular Catalysis A:Chemical*, 162(2000) 307 – 316.
- Huang, C. Liu, Q. Wenjie, F. and Qiu, X. "Boron Nitride Encapsulated Copper Nanoparticles: A Facile One Step Synthesis and Their effect on Thermal Decomposition of Ammonium Perchlorate." *Scientific Research*, 5(2015)1-11.
- Hummers W.S. and Offeman, R.E. "Preparation of Graphitic Oxide." *Journal of American Chemical Society* 80(6)(1958)1339.
- Hunley, J.D. "The History of Solid-Propellant Rocketry: What We Do and Do Not Know (Invited Paper) in 35<sup>th</sup> AIAA/ASME/SAE/ASJEoE in the Propulsion Conference and Exhibit." (1999).
- Ishitha, K. and Ramakrishna, P.R. "Studies on The Role of Iron Oxide and Copper Chromite in Solid Propellant Combustion." *Combustion and Flame*, 161 (2014) 2717-2728.
- Ismaila, S.O. Bolaji, B.O. Adetunji, O.R. Adekunle, N.O. Yusuf, T.A. and Sanusi, H.O. "On Vehicular Emissions of Petrol and Diesel Engines." *International Journal of Engineering*, 1584(2013)178-180.
- Jacob, P.W.M. and Whitehead, H.M. "Decomposition and Combustion of Ammonium Perchlorate." *Chemical Review*, 69(1969)551-590.
- Jacobs, P. and Kureishy, A.R.T. "The Effect of Additives on Thermal Decomposition of Ammonium Perchlorate." *Symposium (International) on combustion*, 8(1961)672-677.
- Jacobs, P.W. W.L.NG, "Thermal decomposition of ammonium perchlorate single crystals," *Journal of Solid State Chemistry*, 9(1974) 315-322.
- Jeong, H.K. Lee, Y.P. Park, M. H. An,K.H., Kim, I.J. Yang, C.W. Park, C.Y. Ruoff, R.S and Lee, Y.H. " Evidence of Graphitic AB Stacking Order of Graphite Oxides." *Journal of American Chemical Society*, 130(2008)1362-1366.
- Jeppson, M.B, Beckstead, M.W. and Jing,Q. "A Kinetic Model for the Premixed Combustion of a Fine AP/HTPB Composite Propellant", AIAA 36th Aerospace Sciences Meeting and Exhibit, AIAA (1998)98-0447.
- Jones L.E. "A Safety Manual for Experimental and Amateur Rocket Scientists." California Rocket Science Books (2003).
- Jones, C. Taylor, K. J. Crudace, S. H. and Hutchings, G.J. "Copper Manganese Oxide Catalysts for Ambient Temperature Carbon Monoxide Oxidation: Effect of Calcination on Activity." *Journal of Molecular Catalysis A: Chemical* 305(2009) 121–124.

- Jones, C. Taylor, S. H. Burrows, A. Crudace, M. J. Kiely, C. J. and Hutchings, G. J. "Cobalt Promoted Copper Manganese Oxide Catalysts for Ambient Temperature Carbon Monoxide Oxidation." *Chemical Communication*, 1707(2008) 1-7.
- Jose Luis De La Fuente et. al. High Performance HTPB-based Energetic Nanomaterial with CuO Nanoparticles, *Journal of Nanoscience and Nanotechnology* 9(2009)6851.
- Kaniyoor, A. and Ramaprabhu, S. "A Raman Spectroscopic Investigation of Graphite oxide Derived Graphene." *AIP Advances.*, 201, 22, 032183.
- Kawamoto, M.A. Pardini L.C. and Rezende, L.C. "Synthesis of Copper Chromite Catalyst" *Aerospace Science and Technology*, 8(2004)591-598.
- Kishore, K. and Sunitha, M.R. "Effect of Transition Metal Oxides on Decomposition and Deflagration Composite Solid Propellant Systems: A Survey." *The American institute of Aeronautics and Astronautics*, 17(1979)1118–1125.
- Kissinger, H.E. "Reaction Kinetics in Differential Thermal Analysis." *Analytical Chemistry*, 29(1957)1702-1706.
- Kleger, K. and Zimmerman, G.A. "Steady Burning Rate and Affecting Factors,in: Non Steady Burning and Combustion Stability of Solid Propellants." *American Institute of Aeronauticsand Astronautics*, Washington, 144(1992).
- Kshirsagar, D.R. Sudhir, Mehilal, Singh, P.P. and Bhattacharya, B. "Evaluation of Nano Fe<sub>3</sub>O<sub>4</sub> in Composite Propellant Formulation." *International Journal of Energetic Materials and Chemical Propulsion*, 12(2013)463-474.
- Kubota, N. "Propellants and Explosives." 3<sup>rd</sup> edition, Wiley -VCH, Verlag, 2001.
- Kudin, K.N. Ozbas, B. Schniepp, H.C. Prud'homme, R.K. Aksay, I.A. and Car, R. " Raman Spectra of Graphite Oxide and Functionalized Graphene Oxide," *Nano Letters*, 1(8) (2008)36-41.
- Kumar, H. Tengli, P.N. Mishra, V.K. Tripathi, P. Pal, D.B. and Mishra, P.K. " Synthesis and Catalytic Activity of Cu-CR-O-TiO<sub>2</sub> Composites for the thermal Decompsoition of Ammonium Perchlorate: Enhanced Decomposition Rate of Fuel for Solid Rocket Motors." *RSC Advances*, 7(2017)12486-12495.
- Lei, Z. and F. Shi and L. Lu, "Incorporation of MnO<sub>2</sub>-Coated Carbon Nanotubes Between Graphene Sheets as Supercapacitor Electrode," *ACS Applied Materials and Interface*, 4(2)(2012)1058–1064.
- Li, M. Wang, D. Shi, X. Zhang, Z. and Dong, T."Kinetics of Catalytic Oxidation of CO Over Copper-Manganese Oxide Catalyst." *Separation and Purification Technology* 57(2007)147–151.

- Li, N. Cao, M. Wu, Q. and Hu, C. "A Facile One-Step Method to Produce Ni/Graphene Nanocomposites and Their Application to the Thermal Decomposition of Ammonium Perchlorate." *CrystEng Comm* 14(2012)428-434.
- Li, N. Geng, Z. Cao, M. Ren, L. Zhao, X. Liu, B. Tian Y. and Hu, C. "Well Dispersed Ultrafine Mn<sub>3</sub>O<sub>4</sub> Nanoparticles on Graphene as Promising Catalyst for the Thermal Decomposition of Ammonium Perchlorate." *Carbon* 54(2013) 124-132.
- Li, P. Zhou, Z. Xu H. and Zhang, Y. "A Novel Hydrolysis Method to Synthesize Chromium Hydroxide Nanoparticles and its Catalytic Effect in the Thermal Decomposition of Ammonium Perchlorate." *ThermochimicaActa*, 544(2012) 71-76.
- Li, Z. Xiang, X. Bai, L. and Li, F. "A Nanocomposites Precursor Strategy to Mixed-Metal Oxides with Excellent Catalytic Activity for Thermal Decomposition of Ammonium Perchlorate." *Applied Clay Science*, 65-66 (2012)14-20.
- Ling, P.Q. Chen, L.Y.Wang, Lei, A.Z. Zhao, Z. Lun, R. and Cui, P. "Preparation and Characterization of Rice-Shaped MnO<sub>2</sub>/CNTs Composite and Superior Catalytic Activity on Thermal Decomposition of Ammonium Perchlorate." *Fullerenes Nanotubes and Carbon Nanostructures*, 25(2017) 23-28.
- Liu, L. Li, F. Tan, L. Ming L. and Yi, Y. "Nanometer Ni, Cu, Al and NiCu Powders on the Thermal Decomposition of Ammonium Per-chlorate. "Propellant Explosives Pyrotechnics," 29(2004)34-38.
- Liu, L. Li, F. Tan, L. Ming, L and Yang Yi, "Effects of Nanometer Ni, Cu, Al and NiCu Powders on the Thermal Decomposition of Ammonium Perchlorate, Propellants, Explosives, Pyrotechnics, 29(2004)34-38.
- Liu, Q. Liu, C. Nie, X. Bai, L. and Wen, S. "Facile Synthesis of Mesoporous Co<sub>3</sub>O<sub>4</sub> via a Soft Reactive Grinding Route and Their Application in the CO oxidation."Materials Letters, 72(2012)101-103.
- Liu, Q. Sun, J. Long, H. Sun, X. Zhong, X. and Xu, Z. "Hydrothermal Synthesis of CoFe<sub>2</sub>O<sub>4</sub> Nanoplatelets and Nanoparticles."Materials Chemistry and Physics, 108(2008) 269–273.
- Liu, T. Wang L. and Hu, B. "Preparation of Nanometric CuFe<sub>2</sub>O<sub>4</sub> by Auto-Combustion and its Catalytic Activity on Thermal Decomposition of Ammonium Perchlorate."Materials Letters,62(2008)4056-4058.
- Llusar, M. Fores, A. Badenes, J.A. Calbo, J. Tena, M. A. and Monros, G. "Colour Analysis of Some Cobalt-Based Blue Pigments."Journal of European Ceramic Society, 21(2001) 1121-1130.

- Lorenzi, G. Baldi, G. Benedetto, F.D. Faso, V. Lattanzi, P. and Romanelli, M. "Spectroscopic Study of a Ni-bearing Gahnite pigment." *Journal of European Ceramic Society*, 26(2006) 317-32.
- Mahanta, A.K. Dharmsaktu, I. and Pattnayak, P. K. "Rheological Behaviour of HTPB-based Composite Propellant: Effect of Temperature and Pot Life on Casting Rate." *Defence Science Journal*, 57(2007)435-442.
- Makwana, N.R. Amin, C.M. and Dabhi, S.K. "Development and Performance Analysis of Nickel Based Cobalt Catalyst", *International Journal of Advanced Engineering Technology* (2013)10-13.
- Manoharan, S.S. and Patil, K.C. "Combustion Synthesis of Metal Chromite Powders." *Journal of American Ceramic Society*, 75(1992) 1012-1015.
- Marquez, G. Sagredo, V. Marquina, C. Torres, T.E. Ibarra, M.R. and Goya, G.F. "Magnetic Properties of  $\text{CoFe}_{0.5}\text{Cr}_{1.5}\text{O}_4$  Nanoparticles." *Revista Mexicana de Fisica S*, 58(2)138–141.
- Maycock, J.N. and Pyne, C.E. "Lattice Modification to Control the Burn Rate of Ammonium Perchlorate Propellants," presented Western States Section of Combustion Institute, 29.04;1969, N.W.G. Chinal Lake, California.
- Mehilal, S.J. Kurva, R. Sundaramoorthy, N. Dombe, G. Singh, P. P. and Bhattacharya, B. "Studies on High Burning Rate Composite Propellant Formulations using TATB as Pressure Index Suppressant." *Central European Journal of Energetic Materials*, 9(2012) 237-249.
- Mestre, S. Palacios M.D. and Agut, P. "Solution Combustion Synthesis of  $(\text{Co},\text{Fe})\text{Cr}_2\text{O}_4$  Pigments." *Journal of European Ceramic Society*, 32(2012)1995-1999.
- Meyer, D.H. "A Study of Propellants and Specific Impulse in Model Rocket Engines." National Association of Rocketry (1984).
- Mindru, D. Gingasu, G. Marinescu, L. Patron, J. M. Calderon-Moreno, C. Bartha, C. Andronescu, A. and Crisan, "Cobalt Chromite Obtained by Thermal Decomposition of Oxalate Coordination Compounds." *Ceramic International*, 40 (2014) 15249-15258.
- Mishra, V.K. . Srivastava, S.K. Asthana, B.P. and Kumar, D. "Structural and Spectroscopic Studies of Hydroxyapatite Nanorods Formed via Microwave-Assisted Synthesis Route." *Journal of American Ceramic Society*, 95(2012) 2709–2715.
- Mishra, V.K. Bhattacharjee, B.N. Kumar, D. Rai, S.B. and Parkash, O. "Effect of Chelating Agent at different pH on the Spectroscopic and Structural Properties of microwave Derived Hydroxyapatite Nanoparticles: A Bone Mimetic Materi." *New Journal of Chemistry (RSC)*, 40(2016)5432-5441.

- Mishra, V.K. Rai, S.B. Asthana, B.P. Parkash, O. and Kumar, D. "Effect of Annealing on Nanoparticles of Hydroxyapatite Synthesized via Microwave Irradiation: Structural and Spectroscopic Studies." *Ceramic International*, 40(2014)11319–11328.
- Nakamura, H. and Akiyoshi, M. "Combustion Catalyst of Non-Pollutant Solid Rocket Propellant." *Journal of Japan Explosives Society*, 63(2002) 163-168.
- Naz, S. Durrani, S.K. Mehmood, M. and Nadeem, M. "Hydrothermal Synthesis, Structural and Impedance Studies of Nanocrystalline Zinc Chromite Spinel Oxide Material." *Journal of Saudi Chemical Society*, 20(2015)585-593.
- Nemanich,R.J. and Solin, S.A. "First- and Second Order-Raman Scattering from Finite- Size Crystal of Graphit," *Physical Review B*, 20(1979)392-401.
- Neto, A.H.C. Guinea, F. Peres, N.M.R. Novoselov, K.S. and Geim, A.K. "The Electronic Properties of Graphene" *Reviews of Modern Physics*, 81(2009)109-162.
- Njagi, E.C. Genuino, H.C. Kingondu, C.K. Chen, C. Horvath, D. and Suib, S.L. "Preferential Oxidation of CO in H<sub>2</sub> Rich Feeds over Mesoporous Copper Manganese Oxide Synthesized by a Redox Method." *International Journal of Hydrogen Energy*, 36(2011) 6768-6779.
- Ozawa, T. "A New Method of Analysing Thermo-gravimetric Data." *Bulletin of the Chemical Society Japan*, 38(1965)1881-1886.
- Ozawa, T. "Estimation of Activation-Energy by Isoconversion Methods," *Thermochimica Acta*, 203(1992)159-165.
- Park, S. and Ruoff, R.S. "Chemical Methods for the Production of Graphenes," *Nat. Nanotechno.*, 4(2009) 217–224.
- Patil, P.R. Krishnamurthy V.N. and Joshi, S.S. "Effect of Nano-copper Oxide and Copper Chromite on the Thermal Decomposition of Ammonium Perchlorate." *Propellant, Explosive, Pyrotechnique*, 33(2008)266-270.
- Pei S. and Cheng, H.M. "The Reduction of Graphene oxide." *Carbon*, 50(9)(2012)3210–3228.
- Pesina, M.R. Domínguez J.G. Felipe, G.H. ,Luisa, M.F. and Octavio, D. "The Thermal Decomposition of Ammonium Perchlorate-Aluminum Propellants in Presence of Metallic Zinc Particles." *Materials Sciences and Applications*, 8(2017) 436-447.
- Ping, C. "Preparation of Cu/CNT Composite Particles and Catalytic Performance on Thermal Decomposition of Ammonium Perchlorate." *Propellants, Explosives, Pyrotechniques*, 31(2006)452-455.

- Prockop, L.D. and Chichkova, R.I. "Carbon Monoxide Intoxication: An updated Review." *Journal of the Neurological Sciences*, 262(2007) 122–130.
- Rath, C. Mohanty P. and Banerjee, A. "Magnetic Properties of Nanoparticles of Cobalt Chromite." *Journal of Magnetic Materials*, 323(2011) 1698-1702.
- Raub, J.A. Mathieu-Nolf, M. Hampson, N.B. and Thom, S.R. "Carbon Monoxide Poisoning – A Public Health Perspective." *Journal of Toxicology*, 145(2000) 1-14.
- Reid, D.L. Draper, R. Richardson, D. Demko, A. Allen, T. Petersen, E.L. and Seal, S. "In-Situ Synthesis Of Polyurethane – TiO<sub>2</sub> Nanocomposite and Performance in Solid Composite Propellants." *Journal of Material Chemistry A*, 2(2014) 2313-2322.
- Reid, D.L. Russo, A.E. Caro, R.V. Stephens, M.A. Page, A.R.L. Spalding, T.C. Petersen, E.L. and Seal, S. "Nanoscale Additives Tailor Energetic Materials." *Nano Letters*. 7 (2007)2157-2161.
- Said, A.A. and Qasami, R. "The Role of Copper Cobaltite Spinel, Cu<sub>x</sub>Co<sub>3-x</sub>O<sub>4</sub> During the Thermal Decomposition of Ammonium Perchlorate." *ThermochimicaActa*, 275(1996)83-91.
- Sbirrazzuoli, N. "Is the Friedmann method is applicable to transformation with temperature dependent reaction heat." *Macromolecular chemistry and physics* 208(2007)1592-1597.
- Severino, F. Brito, J. L. Laine, J. Fierro, J. L.G. and Agudo, A.L. "Nature of Copper Active Sites in the Carbon Monoxide Oxidation on CuAl<sub>2</sub>O<sub>4</sub> and CuCr<sub>2</sub>O<sub>4</sub> Spinel Type Catalysts." *Journal of Catalysis*, 177(1998) (82-95).
- Shidlovsky, A.A. Shmagin, L.F. and Bulatova, V.V. "The Effect of Some Additives on Thermal Decomposition of Ammonium Perchlorate," *Chemistry and Chemical Technology*, 8(1965)533-538.
- Sickafus, K.E. Wills, J.M. and Grimes, N.W. "Structure of Spinel." *Journal of American Ceramic Society*, 82(1999) 3279-3292.
- Singh, G. Singh, Kapoor I.P.S. Dubey, S. " Kinetics of thermal Decomposition of Ammonium Perchlorate with Nanocyrstals of Binary Transition Metal Ferrites." *Propellant, Explosive, Pyrotechnic*, 34(2009)72-77.
- Solymosi F. and Rasko, J. "Thermal decomposition and Ignition of Ammonium Perchlorate in the Presence of Zinc Perchlorate." *Z.Phys. chem. N.F.*,67(1969) 75-85.
- Solymosi, F. "Initiation of ammonium perchlorate- Ignition by Chromic Oxide Titanium Dioxide Catalysts." *Combustion Flame*, 9(1965) 141-148.
- Solymosi, F. and Revesz, L. "Thermal Decomposition of Ammonium Perchlorate in Presence of Zinc Oxide." *Nature* 192 (1961) 64–65.

- Song, L. Zhang, S. Chen, B. Ge, J. and Jia, X. "A Hydrothermal Method for Preparation of  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> Nanotubes and Their Catalytic Performance for Thermal Decomposition of Ammonium Perchlorate." *Colloids and Surfaces A: Physicochemical Engineering Aspects*, 360 (2010)1-5.
- Stephens, M.A. Petersen, E.L. Carro, R. Reid, D.L. and Seal, S. " Multi-Parameter Study of nanoscale TiO<sub>2</sub> and CeO<sub>2</sub> Additives in Composite AP/HTPB Propellants," *Propellant, Explosive, Pyrotechnics*, 35(2010)143-152.
- Sutton G.P. and O. Biblarz. "Rocket Propulsion Elements." Wiley New York (2001).
- Sutton,G. P. and Biblarse, O. "Rocket Propulsion Elements." A Wiley Inter- Science Publication, New York 2000, 7<sup>th</sup>Edition,
- Torgashev, V.I. Prokhorov, A.S. Komandin, G.A. Zhukova, E.S. Anzin, V.B. Talanov, V.M. Rabkin, L.M. Bush, A. Dressel A. M. and Gorshunov, B.P. "Magnetic and Dielectric Response of Cobalt–Chromium Spinel CoCr<sub>2</sub>O<sub>4</sub> in the Terahertz Frequency Range." *Physics of Solid State*, 54(2012)350-359.
- Vyazovkin S. and Wight, C.A. "Kinetics of Thermal Decomposition of Cubic Ammonium Perchlorate," *Chemistry of Material*, 11(1999) 3386-3393.
- Wang, J. He, S. Li, Z. Jing, X. and Zhang, M. "Synthesis of claw-like CuO and its catalytic activity in the thermal decomposition of ammonium perchlorate." *Materials Science Poland*,27(2)(2009)501-507.
- Wang, P. Zhai, Y. Wang D. and Dong, S. "Synthesis of Reduced Graphene Oxide-Anatase TiO<sub>2</sub> Nanocomposite and its Improved Photo-Induced Charge Transfer Properties." *Nanoscale* 3(2011)1640-1645.
- Wang, Y. Zhu, J. Yang, X. Lu, L. and Wang, X. "Preparation of Nio Nanoparticles and Their Catalytic Activity in the Thermal Decomposition of Ammonium Perchorate." *ThermochimicaActa*, 437(2005) 106-109.
- Wang, Z.W. Lazor, P. Saxena S.K. and Artioli, G. "High-Pressure Raman Spectroscopic Study of Spinel (ZnCr<sub>2</sub>O<sub>4</sub>)."*Journal of Solid State Chemistry*, 165(2002) 165-170.
- Weifan, C. Fengsheng, L. Leili, L. and Yongiu, L. "Synthesis of Nano-sized Yttria via a Sol-Gel Process Based on Hydrated Yttrium Nitrate and Ethylene Glycol and Its Catalytic Performance for Thermal Decomposition of NH<sub>4</sub>ClO<sub>4</sub>."*Journal of Rare Earth*, 24(2006) 543-548.
- Wojciechowska, M. Przystajko, W. and Zielinski, M. "CO oxidation catalysts based on copper and manganese or cobalt oxides supported on MgF<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub>." *Catalysis Today*, 119(2007) 338-341.

- Xiao, F. Sun, X. Wu, X. Zhao, J. and Luo, Y. "Synthesis and Characterization of Ferrocenyl-Functionalized Polyester Dendrimers and Catalytic Performance for Thermal Decomposition of Ammonium Perchlorate." *Journal Organometallic Chemistry.* 713 (2012) 96–103.
- Xu, H. Wang, X. and Zhang, L. "Selective Preparation of Nanorods and Micro-Octahedrons of  $\text{Fe}_2\text{O}_3$  and Their Catalytic Performances for Thermal Decomposition of Ammonium Perchlorate." *Powder Technology*, 185(2008)176-180.
- Yan, J. Zhang, L. Yang, H. Tang, Y. Lu, Z. Guo, S. Dai, Y. Han Y. and Yao, M. " $\text{CuCr}_2\text{O}_4/\text{TiO}_2$ , Heterojunction for Photo Catalytic  $\text{H}_2$  Evolution under Simulated Sunlight Irradiation." *Solar Energy*, 83(2009)1534-1539.
- Yang, F. Zhao, M. Zheng, B. Xiao, D. Wu, L. and Guo, Y. "Influence of pH on the Fluorescence Properties of Graphene Quantum Dots using Ozonation Peroxide Hydrothermal Synthesis." *Journal Material Chemistry(RSC)*, 22(2012)25471-25479.
- Yazdi, F.S. Petersen, E.L. "The Effect of Catalysts on the Deflagration Limits of Ammonium Perchlorate." *Combustion Science Technology*, 5(1972) 61-67.
- Yuan, Y. Jiang, Wang, Y. Shen, P. Li, F. Li, P. Zhao, F and Gao, H, "Hydrothermal Preparation of  $\text{Fe}_2\text{O}_3$ /Graphene Nanocomposites and its Enhanced catalytic Activity on Thermal decompstion of Ammonium perchlorate." *Applied Surface Science*, 303(2014)354-359.
- Zhan, D. Ni, Z. Chen, W. Sun, L. Luo, Z. Lai, L. Yu, T. Thye A. Wee, S. and Shen, Z. "Graphite Oxide under High Pressure: A Raman Spectroscopic Study." *Carbon* 49(2011)1362–1366.
- Zhang, W. Li, P. Xu, H. Sun, R. Qing, P. and Zhang, Y. "Thermal Decomposition of Ammonium Perchlorate in the Presence of  $\text{Al}(\text{OH})_3\text{.Cr}(\text{OH})_3$  Nanoparticles." *Journal of Hazardous Materials* 268(2014) c 273-280.
- Zhang, W. Luo, Q. Duan, X. Zhou, Y. and Pei, C. "Nitrated Graphene Oxide and Its Catalytic Activity in Thermal Decomposition of Ammonium Perchlorate." *Materials Research Bulletin*, 50 (2014) a 73–78.
- Zhang, Y. Liu, X. Nie, J. Yu, L. Zhong, Y. and Huang, C. "Improve the Catalytic Activity of  $\alpha\text{-Fe}_2\text{O}_3$  Particles in Decomposition of Ammonium Perchlorate by Coating Amorphous Carbon on Their Surface." *Journal of Solid State Chemistry*, 184(2011)387–390.
- Zhang, Y. Wang, N. Huang, Y. Wu, W. Huang, C. and Meng, C. "Fabrication and Catalytic Activity of Ultra-long  $\text{V}_2\text{O}_5$  Nanowires on the Thermal Decomposition of Ammonium Perchlorate." *Ceramics International*, 40(2014) b 11393-11398.

Zhao S. and Ma, D. "Preparation of CoFe<sub>2</sub>O<sub>4</sub> Nanocrystallites by Solvothermal Process and Its Catalytic Activity on the Thermal Decomposition of Ammonium Perchlorate." *Journal of Nanomaterials*, 2010(2010)1-5.

Zho, J. Liu, Z. and Hu, W. "Fabrication of Co<sub>3</sub>O<sub>4</sub>/Graphene Oxide Nano-Composites Using Super Critical Fluid and Their Catalytic Application for the Decomposition of Ammonium Perchlorate." *Crystal Engineering Communication*, 16(2013)2001-2008.

Zhou, Z. Tian, S. Zeng, D. Tang, G. and Xie, C. "MOX (M = Zn, Co, Fe)/AP Shell-Core Nanocomposites for Self-Catalytically Decomposition of Ammonium Perchlorate." *Journal of Alloys and Compounds*, 513(2012) 213-219.



### List of publications

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#### (A) International publications:

1. **Harish Kumar**, Prahalad N. Tengli, Vijay Kumar Mishra, Pankaj Tripathi, Dan Bahadur Pal and Pradeep Kumar Mishra, “ Synthesis and Catalytic activity of Cu-Cr-O-TiO<sub>2</sub> Composites on Thermal Decomposition of Ammonium Perhclrate: Enhanced decomposition rate of fuel for Solid Rocket Motors” **RSC Advances**, 7(2017)12486 – 12495, 2017.
2. **Harish Kumar**, Prahalad N. Tengli, Vijay Kumar Mishra, Pankaj Tripathi, Awani Bhushan and Pradeep Kumar Mishra, “ Effect of reduced Graphene oxide on Catalytic activity of Cu-Cr-O-TiO<sub>2</sub> to Enhance the Thermal Decomposition Rate of Ammonium Perchlorate: An Efficient Fuel Oxidizer for Solid Rocket Motors” **RSC Advances**.7(2017)36594-36604

#### (B) International/ National conferences (Work Presented)

1. **Harish Kumar**, J. Ram Mohan, Prahalad N. Tengli, and Pradeep Kumar Mishra, “Synthesis, Characterization and Catalytic Activity of Composite of Graphene oxide (GO) with CuCr<sub>2</sub>O<sub>4</sub>.0.7TiO<sub>2</sub> on Thermal Decomposition of Ammonium Per-chlorate”, 2<sup>nd</sup> International Conference on Composites, Biocomposites and Nanocomposites (**ICCBN 2015**), 28<sup>th</sup> to 30<sup>th</sup> October 2015, Durban University of Technology (DUT), Durban, South Africa.
2. **Harish Kumar**, Prahalad N.Tengli, Nand Lal Singh, Dan Bahadur Pal, Pankaj Tripathi and Pradeep Kumar Mishra, “Effect of CuCr<sub>2</sub>O<sub>4</sub>/TiO<sub>2</sub> on the Thermal Decomposition of Ammonium Per-chlorate”, Advances in Materials and Material Processing (**AMMP-2015**), NIT Srinagar, 27<sup>th</sup> to 28<sup>th</sup> March 2015.
3. **Harish Kumar**, D.B.Pal, P.Singh, P.Tripathi, N.L.Singh, P.N.Tengli, J.Rammohan<sup>1</sup> and P. K. Mishra “Catalytic thermal decomposition of Ammonium Per-chlorate in presence of Cu-Cr-Ti-O catalysts” 2<sup>nd</sup> International Conference on Nanostructured Materials and Nanocomposites (**ICNM2014**) 19-21 December 2014, Kottayam, Kerala, India.

