List of Conference Proceedings:

1. Systematic investigation of partonic collectivity through centrality dependence of elliptic flow of multi-strange hadrons in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV in STAR. *
   Md. Nasim for the STAR Collaboration.

2. Energy dependence of $\phi$-meson production and elliptic flow in Au+Au collisions at STAR. *
   Md. Nasim for the STAR Collaboration.
   Pos (CPOD 2013) 049.

3. Energy dependence of elliptic flow of $\phi$-meson in STAR at RHIC. *
   Md. Nasim for the STAR Collaboration.

4. Probing the QCD phase diagram with the measurements of $\phi$-meson production and elliptic flow in the heavy-ion collision at STAR. *
   Md. Nasim for the STAR Collaboration.

List of Other Publications (As a Primary Authors):

1. Elliptic and Triangular flow in asymmetric heavy-ion collisions.

2. Energy dependence of inclusive photon elliptic flow in heavy-ion collision models.
   R. Singh, Md. Nasim, B. Mohanty and S. S. Sambyal
Paper Under Review in STAR Collaboration (As a Primary Authors):

1. Centrality dependence of multi-strange hadrons $v_2$ in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV. *
   Intended for Physical Review Letter (under preparation in physics working group).

2. Probing parton dynamics of QCD matter with $\Omega$ and $\phi$ production. *
   Intended for Physical Review Letter (in collaboration review).

(*) indicates papers on which this thesis is based.

List of Collaboration Papers :

1. $J/\psi$ polarization in $p+p$ collisions at $\sqrt{s} = 200$ GeV in STAR.

2. $J/\psi$ production at low $p_T$ in Au+Au and Cu+Cu collisions at $\sqrt{s_{NN}}=200$ GeV at STAR.

3. Energy Dependence of Moments of Net-proton Multiplicity Distributions at RHIC.
   Accepted for publication in Phys. Rev. Lett.

4. Neutral pion cross section and spin asymmetries at intermediate pseudo-rapidity in polarized proton collisions at $\sqrt{s} = 200$ GeV.
5. Measurement of charge multiplicity asymmetry correlations in high energy nucleus-nucleus collisions at 200 GeV.


7. Fluctuations of charge separation perpendicular to the event plane and local parity violation in $\sqrt{s_{NN}} = 200$ GeV Au+Au collisions at RHIC.

8. Freeze-out dynamics via charged kaon femtoscopy in $\sqrt{s_{NN}} = 200$ GeV central Au+Au collisions.

9. System size dependence of transverse momentum correlations at RHIC.

10. Third harmonic flow of charged particles in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV.

11. Measurement of $J/\psi$ azimuthal anisotropy in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV.

13. $J/\psi$ production at high transverse momenta in $p+p$ and $Au+Au$ collisions at $\sqrt{s_{NN}} = 200$ GeV.

14. Single spin asymmetry $A_N$ in polarized proton-proton elastic scattering at $\sqrt{s_{NN}} = 200$ GeV.

15. Transverse single-spin asymmetry and cross-section for $\pi^0$ and $\eta$ mesons at large Feynman-$x$ in polarized $p+p$ collisions at $\sqrt{s}=200$ GeV.

16. Longitudinal and transverse spin asymmetries for inclusive jet production at mid-rapidity in polarized $p+p$ collisions at $\sqrt{s}=200$ GeV.

17. Measurements of $D^0$ and $D^+$ production in $p+p$ collisions at $\sqrt{s} = 200$ GeV.

18. Di-electron spectrum at mid-rapidity in $p+p$ collisions at $\sqrt{s}=200$ GeV.

19. Directed flow of identified particles in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV at RHIC.

20. Identified hadron compositions in $p+p$ and $Au+Au$ collisions at high transverse momenta at $\sqrt{s_{NN}} = 200$ GeV.
   G. Agakishiev et al. (STAR Collaboration).