This thesis summarizes the following publications:

1. **Effect of pyroxenite flux on the quality and microstructure of hematite pellets**  

2. **Development of superior quality iron ore pellets for blast furnace using pyroxenite flux**  
   Tata Search 2011, vol.1, p 35-41

3. **Effect of pellet basicity and MgO content on the quality and microstructure of hematite pellets**  

4. **Use of magnesium silicate as flux to develop superior quality CaO-free iron ore pellets for blast furnace**  
   Srinivas Dwarapudi, Tamal K Ghosh, T K Sandeep Kumar, Vilas Tathavadkar, D Bhattacharjee and R Venugopal  
   Steel Tech, Vol.6, No.1 Oct 2011, p27-36
5. Effect of MgO in the form of magnesite on the quality and microstructure of hematite pellets
Srinivas Dwarapudi, Tamal K Ghosh, Vilas Tathavadkar, Mark B Denys, D Bhattacharjee and R Venugopal

6. Characterization, grinding and pelletizing studies of Noamundi iron ore fines
Srinivas Dwarapudi, Tamal Kanti Ghosh, Amitabh Shankar, Vilas Tathavadkar, D Bhattacharjee and R Venugopal

7. Effect of pellet basicity and MgO on the quality and microstructure of hematite Pellets
Srinivas Dwarapudi, V Tathavadkar, D Bhattacharjee and V Rayasam
6th European coke and iron making congress, Dusseldorf, Germany, 27th June- 1st July 2011, Pelletizing session-8, No.1.

8. Quality and microstructure of hematite pellets with magnesite as fluxing agent
Srinivas Dwarapudi, TK Sandeep Kumar, Vilas Tathavadkar, Mark B Denys, D Bhattacharjee and R Venugopal
Asia Steel conference, Sep. 24-26, 2012, Beijing, China
Conference proceedings,w133-26

Patent filed from the results of this work:
Method for improving the quality of iron ore pellets by adding magnesium silicate.

Application number & date: 695/KOL/2010 dated 28.06.10.
Description of co-authors contributions:

Prof. R Venugopal, Professor, FME Dept., Indian School of Mines, Dhanbad, India and Dr. D. Bhattacharjee, Director RD&T Tata Steel Ijmuiden, The Netherlands have contributed as supervisors.

Dr. Tamal K Ghosh, Principal Researcher, R&D, Tata Steel, Jamshedpur, carried out characterization through QEMSCAN microscope.

Dr. Amitabh Shankar, Researcher, R&D, Tata Steel, Jamshedpur, carried out softening-melting experiments.

Mr. TK Sandeep Kumar Researcher, R&D, Tata Steel, Jamshedpur, carried out TGA and XRD for the samples and pellet firing experiments.

Dr. Vilas Tathavadkar, Head, R&D and Mr. Mark B Denys, Chief, R&D and SS, Tata Steel, Jamshedpur, facilitated laboratory infrastructure and testing knowledge.