**EE568 Project 4 – Proposal by Serhat Özküçük**

My PhD work is about industrial servo drive systems. In this concept, I can prepare a servo PMSM motor design for the ee568 course.

**The application:** Industrial servo systems

**The type of the machine:** Permanent magnet synchronous machines (PMSM), surface mount type.

**Power, voltage and current ratings:** 1kW, 220V - 4A (nominal for 1 phase), (3 phase inverter ratings: DC level of bulk is 310V (from 220V AC rms), 190Vph-ph, 3.1Aph, Y connected)

**Operating conditions:** 3000 rpm rated speed, 4Nm rated torque (12Nm max. torque), Duty type:S1 (Continuously),Natural cooling, IP 54 Enclosure (industrial applications), 0-55’C ambient temperature.

**Limitations (if there is any) such as mass, diameters, cost, efficiency:** max. mass 6kg, low inertia for obtaining dynamic response so the dimensions will not exceed the motor length L\_max=250mm, outer diameter Do\_max=125mm. (The smaller it can be designed, the better.)