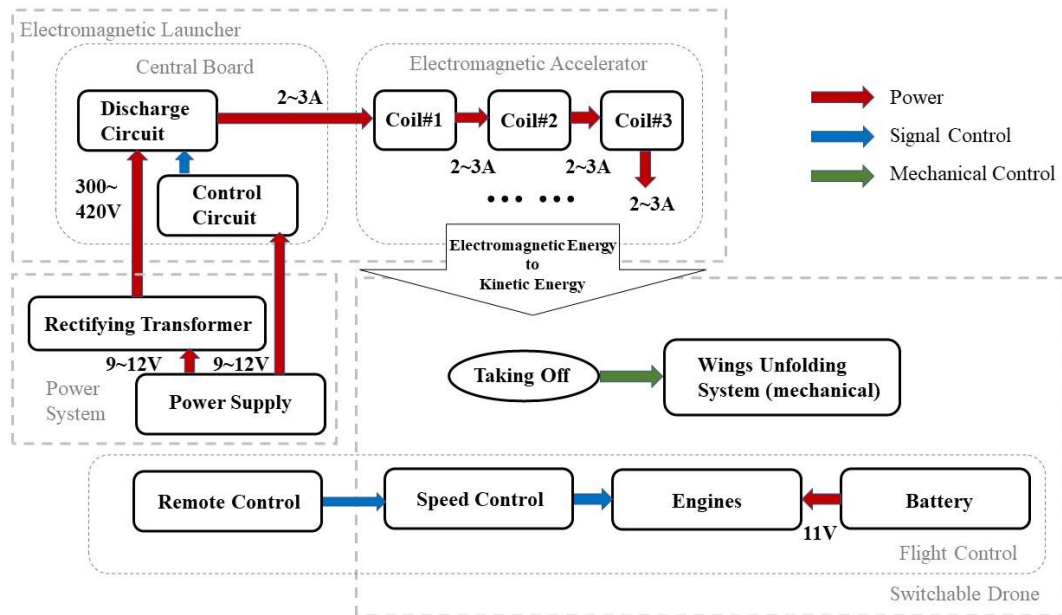


Electromagnetic Launch System with Switchblade Drone

Team#4

Block Diagram:



High-Level Requirements:

1. The drone should accelerate continuously and finally gets a speed of 3-6 m/s to take off. The launch system can work outside normally when the wind speed is 0-3 m/s. Drone should be able to fly a distance of ten meters after launch.
2. The drone can deploy and lock its wings after it leaves the launch system and should complete the deployment of all four wings within 1 second after launch.
3. The drone can be controlled remotely using remote controller.

Points Summary Table:

Module Name	High Level Requirement	Points
Power Supply Module	<ul style="list-style-type: none"> ● The Output voltage can be adjusted from 0 V to 450 V. ● The charging circuit can be self-disconnected when the capacitors are fully charged. 	10
Acceleration Circuit Module	<ul style="list-style-type: none"> ● The drone can accelerate continuously by triggering the photoresistances one by one. ● It can be judged that if the coil is discharged completely. ● The drone can be accelerated to 3-6 m/s. 	10
Mechanical Launch System Module	<ul style="list-style-type: none"> ● The drone can be accelerated stably and in the desired direction. ● The launch system can fix all the circuit components such as coils and photoresistances. ● The drone can separate and take off after it arrives at the end of the track. 	10
Flight Control Module	<ul style="list-style-type: none"> ● The drone can be controlled remotely using remote controller. 	10
Switchblade Drone Module	<ul style="list-style-type: none"> ● The drone can deploy and lock its wings after it leaves the launch system. ● The drone should be weighted smaller than 100g without flight control and smaller than 1000g with flight control. 	10
	Total	50

Thanks!