Master's Thesis Information Showcase
Spring/Fall Semester-20xx
Year 20xx

	Department: Chemistry Programme: Masters of Science Specialization: Industrial Chemistry
1	**Title of the Thesis** The prospects of bio floc technology (bft) for sustainable small-scale aquaculture development for common carp *(cyprinus carpio)*
2	**Abstract** (min 300 to 500 words) Conventional aquaculture practices often release large amounts of untreated water into the environment, contributing to pollution and increasing pressure on already limited water resources. Biofloc technology (BFT) presents an environmentally friendly alternative by relying on beneficial microorganisms to break down harmful organic and inorganic wastes, including uneaten feed. This process not only reduces water exchange requirements but also produces a natural, nutrient-rich food source for cultured fish. By maintaining a balance between carbon and nitrogen within the system, BFT helps improve overall water quality and supports sustainable aquaculture production. In this context, a ten-week study was carried out to assess the effects of biofloc technology on water quality, growth performance, nitrogen retention, biofloc nutritional value, and the hematological health of common carp (cyprinus carpio) reared under BFT conditions. The study focused on evaluating how different pH levels influenced common carp growth, survival, water quality parameters, biofloc composition, and oxidative stress. The results showed no significant differences in survival, daily growth rate, or feed conversion ratio among the treatments. Furthermore, physiological and biochemical analyses indicated that the fish remained healthy throughout the experiment, with no signs of stress or adverse effects. The results indicate that biofloc technology can be effectively implemented in systems for nurseries of common carp. The positive growth performance, along with stable water quality and fish health at pH levels between 6 and 8, suggests the BFT can be a viable option for sustainable aquaculture.
3	**Impact on SDG#___"** (min 500 words) (Please mention the impact of the relevant attained SDG) SDG1 – No Poverty, Increases smallholder income via higher yields and feed savings. SDG2 – Zero Hunger, more fish per farmer strengthens food security and nutrition. Nutrient-rich flocs may improve fish quality. SDG5 – Gender Equality, Evidence suggests BFT farming is often practiced by younger women. SDG6 – Clean Water & Sanitation, drastically reduces freshwater use; 12× less water/kg fish in BFT vs conventional. Improves effluent quality SDG8 – Decent Work & Growth, creates high-intensity aquaculture jobs (requires labor for management) and income. – Requires skill, so may leave out less-educated.

	SDG12 – Responsible Production, improves feed use efficiency (lower FCR) and recycles nutrients internally. Less reliance on wild fishmeal. SDG13 – Climate Action, Potential to lower aquaculture's carbon footprint via feed savings. SDG14 – Life Below Water, less nutrient pollution preserves local aquatic biodiversity. Low effluent discharge reduces eutrophication risk. – No direct marine impact unless effluent mismanaged.
4	**Scholar Name** (along with contact details) SAHAR (0331-2675700)
5	**Supervisor & Co-supervisor Name** (along with contact details) Dr. Kashif Ahmed, Associate Professor, Department of Chemistry (03012275358)
6	**Graphical Abstract**