



Sudan University of Science and Technology
College of Graduate Studies



**Sampling Inequalities and Fractional-
Order Sobolev Semi-norms with
Operator Theoretical Differences**

**متباينات العينة والرتبة الكسرية لشبه نظم سبوليف مع
مؤثر الفروقات النظرية**

**A Thesis Submitted in Fulfillment Requirements for the Degree
of Doctor of philosophy in Mathematics**

By

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