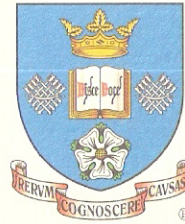


THE UNIVERSITY OF SHEFFIELD



It is hereby certified that

having fulfilled the requirements prescribed by Ordinances and after
due examination was awarded the degree of

Doctor of Philosophy

of this University
on 5 November 2007

Vice-Chancellor

Registrar and Secretary