1120-47-74 **Aamena Rasim Al-Qabani*** (rn030601@reading.ac.uk), University of Reading/ Whiteknights, PO Box 2, Reading, RG6 6AX, United Kingdom, **Titus Willem Hilberdink** (t.w.hilberdink@reading.ac.uk), University of Reading/ Whiteknights, PO Box 2, Reading, RG6 6AX, United Kingdom, and **Jani A. Virtanen** (j.a.virtanen@reading.ac.uk), University of Reading/ Whiteknights, PO Box 2, Reading, RG6 6AX, United Kingdom. *Fredholm properties of block Toeplitz operators on vector valued Fock spaces* $(F^p_\alpha)_N$.

Let F^2 be the standard Fock space. *The vector valued space* $(F^p_\alpha)_N$, is defined by

$$(F^p_\alpha)_N = \{\mathcal{F} = (f_1, f_2, \cdots, f_n) : f_k \in F^p_\alpha for\ all\ 1 \le k \le n\},$$

it is a subspace of L^p_N. Let $\mathcal{A} \in L^\infty_{N\times N}(\mathbb{C})$ is a matrix valued function and let $M_\mathcal{A} : L^p_N \to L^p_N$ is the multiplication operator

The block Toeplitz operator $T_\mathcal{A}$ on $(F^p_\alpha)_N$ defined by

$$T_\mathcal{A}(f) = \left(\sum_{i=1}^N T(a_{ki}) f_i\right)_{k=1}^N = \left(\sum_{i=1}^N P(a_{ki} f_i)\right)_{k=1}^N,$$

where, P is the orthogonal projection from $L^p(\mathbb{C}, d\lambda_\alpha)$ onto F^p_α, and $f \in (F^p_\alpha)_N$.

We study the boundedness, compactness and the Fredholm properties of $T_\mathcal{A}$ on $(F^p_\alpha)_N$ with $\mathcal{A}$ in $(L^\infty(\mathcal{C}) \cap VO)_{N\times N}$ and $(L^\infty(\mathcal{C}) \cap VMO)_{N\times N}$. The main result establishes a criterion for the Fredholmness and the index of $T_\mathcal{A}$ on $(F^p_\alpha)_N$. (Received February 11, 2016)