

## Experimental section

Crude ND was prepared by the standard technique we described elsewhere.<sup>[S1]</sup> A 1:1 alloy of TNT and RDX was detonated in an ice shell, the soot was boiled with concentrated perchloric acid to dissolve the graphitic phase, the excess acid was removed by 5 cycles of washing with boiling distilled water to neutral reaction. The material was characterized by powder X-ray diffraction (modified DRON diffractometer, Cu- $K\alpha$  radiation,  $\lambda=1.5406 \text{ \AA}$ ), indicating primary diamond particles sizes of ca. 5 nm (from peak half-widths according to Debye-Scherrer equation). DW was prepared in an air-tight vessel by stirring 2 g of ND in 1 l of doubly distilled water, homogenizing the suspension in an ultrasonic bath for 1 h, keeping it for several days until solid residue stopped precipitating and the liquid became clear, syringing off this liquid and further clearing it by centrifugation at 15,000 rpm. The solid residue (dried at 200°C for 2 h) totalled 1.85 g, hence the ND concentration in DW was 0.015 %. De-aggregation of crude ND (5 g) in 30 ml of water was performed by impulse mechanical treatment in a Pulversette-6 ball-mill (Fritsch, Germany) for 1 h at 650 r/min, using 25 balls of WC-6 hard alloy (tungsten carbide + 6% cobalt) of 10 mm diameter in a 80 ml container with 30 ml of water. The resulting slurry was used to prepare DW, as above.

Elemental analyses were carried out on a Carlo Erba 1106 analyser. Each sample was analyzed in duplicate, the discrepancies for C, H and N averaging 0.3, 0.1 and 0.05%, respectively. Optical microscopy was carried out with a  $\times 800$  confocal microscope, TEM studies on a JEOL 2100 F transmission electron microscope with a field emission gun, the sample being deposited on a holey carbon grid.

### *Microbiological experiments*

Inoculation with ND powders (20 to 50 mg per Petri dish), DW or water (1 to 2 ml per dish) was performed by spreading over the surface of the broth, that by NDF – by puncture and incision. Each assay was done in triplicate or quintuplicate.

## References

[S1] S.S. Batsanov, S.M. Gavrilkina, A.S. Batsanov, K.B. Poyarkov, I.I. Kulakova, D.W. Johnson, B.G. Mendis, *J. Mater. Chem.* **2012**, *22*, 11166–11172.