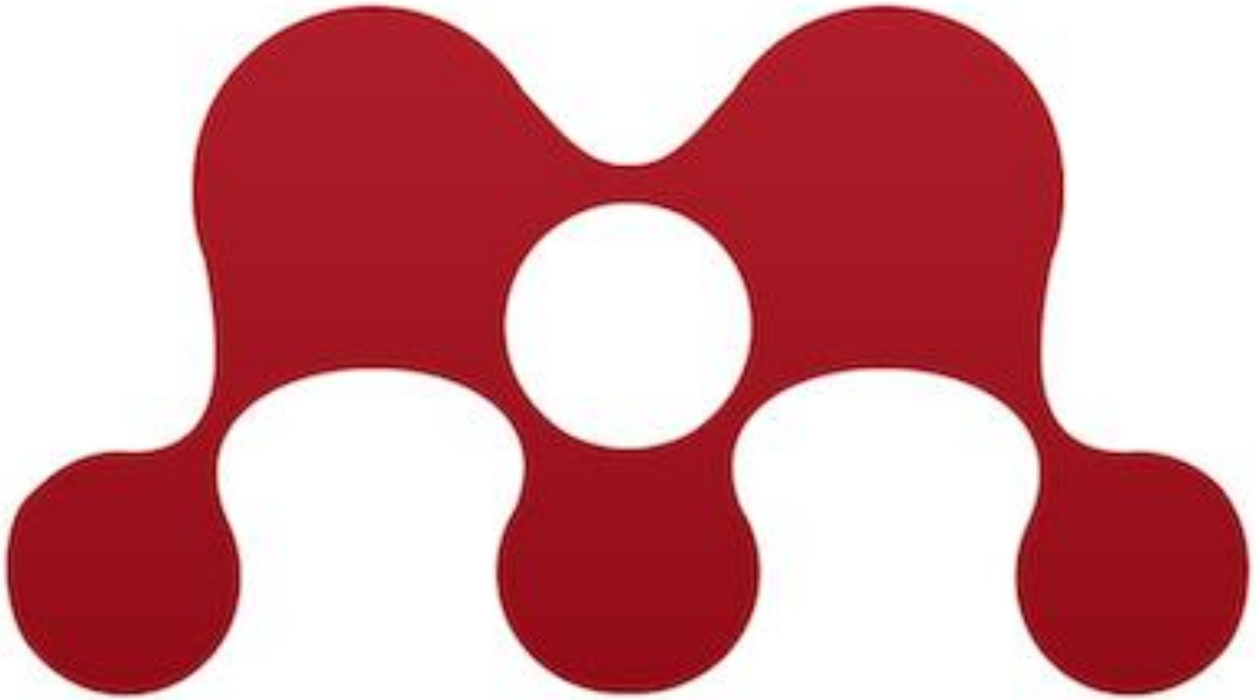
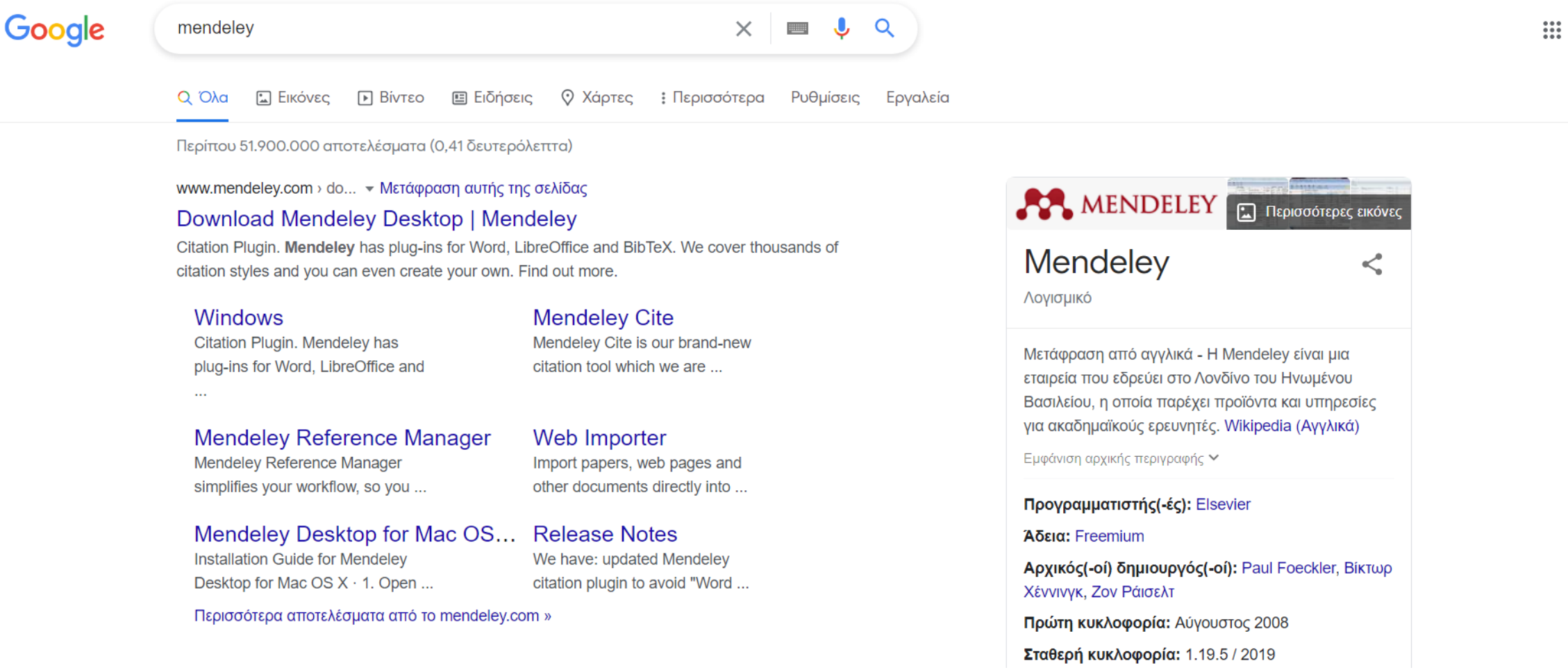
Οδηγίες Εγκατάστασης και Χρήσης



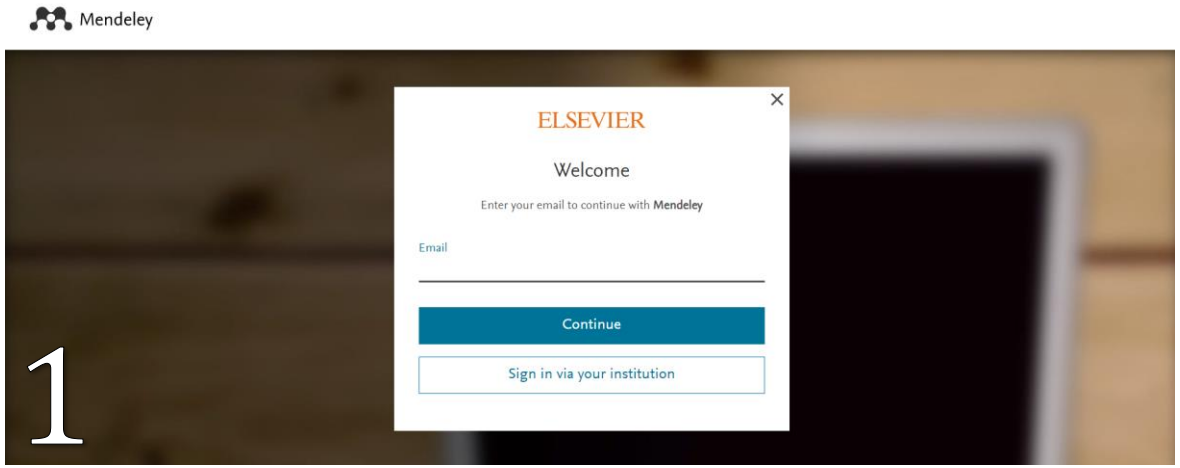
Παπαβασιλείου Αναστάσιος, Χημικός MSc

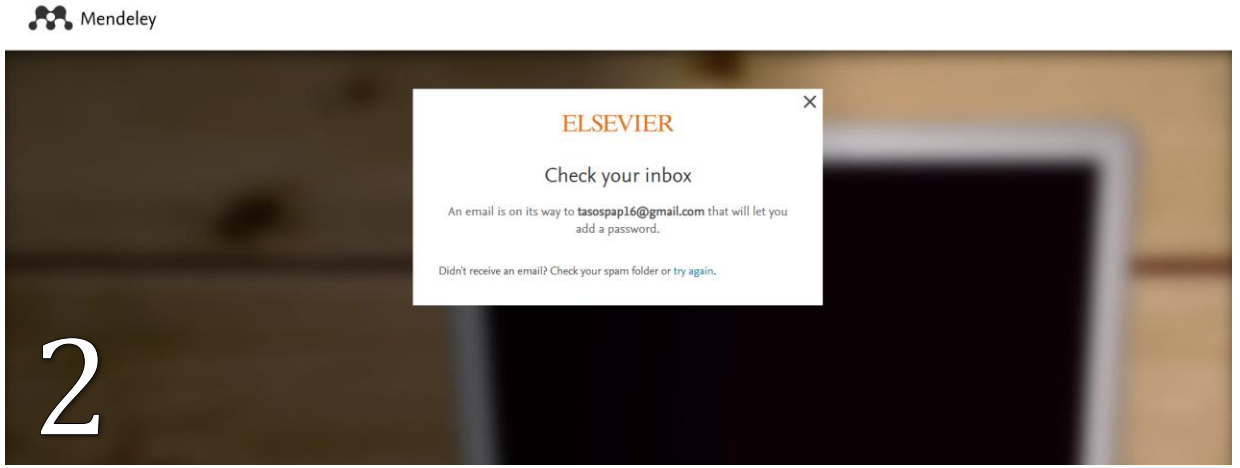
Αναζήτηση του προγράμματος

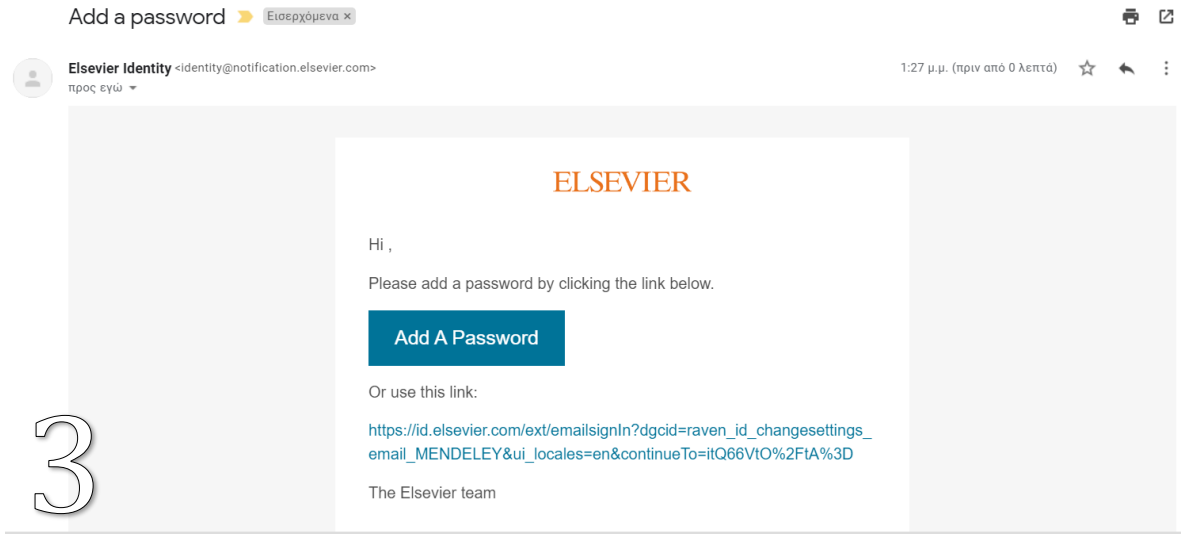


Δημιουργία Λογαριασμού

Δημιουργία Λογαριασμού







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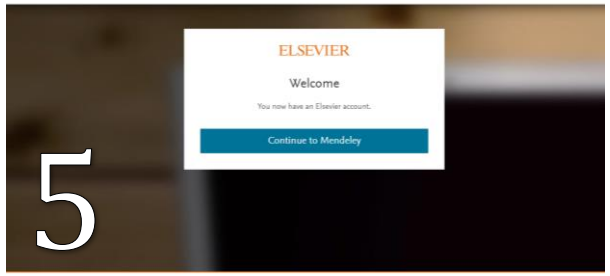

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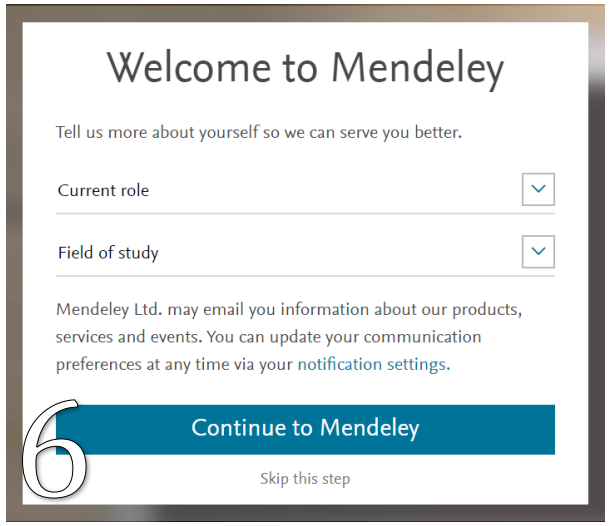

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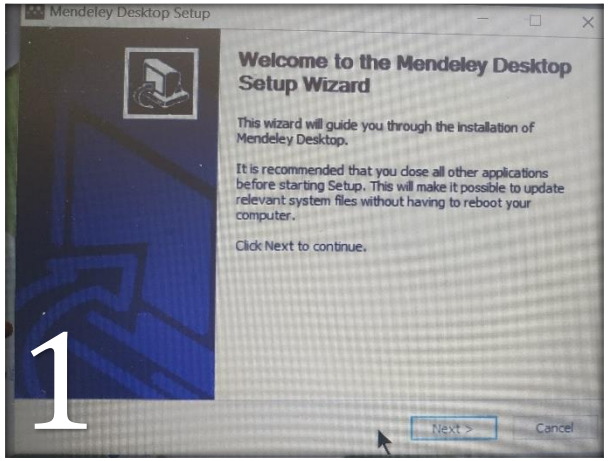
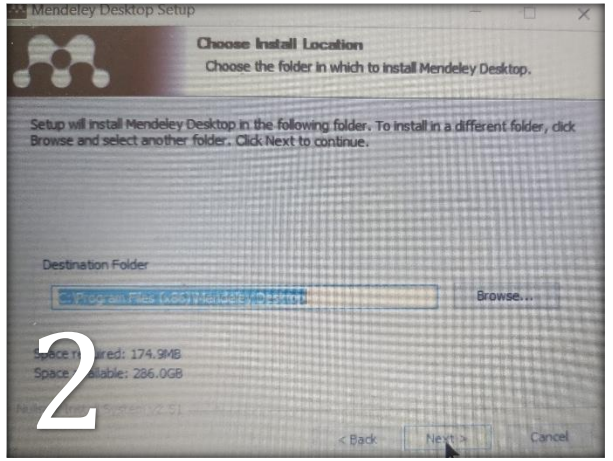
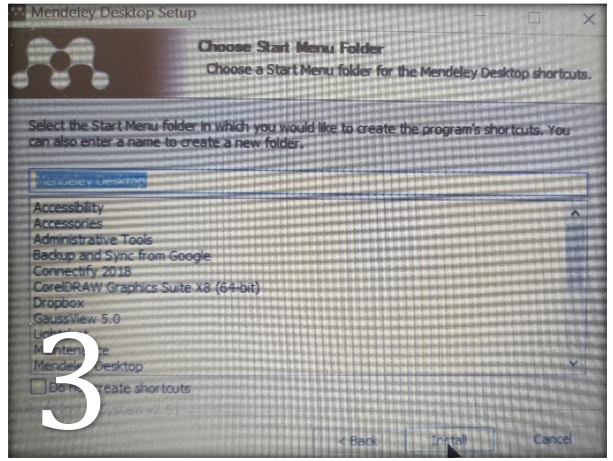
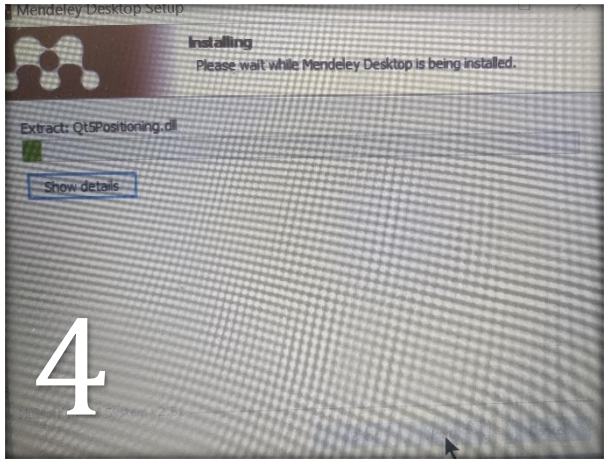
Λήψη του προγράμματος

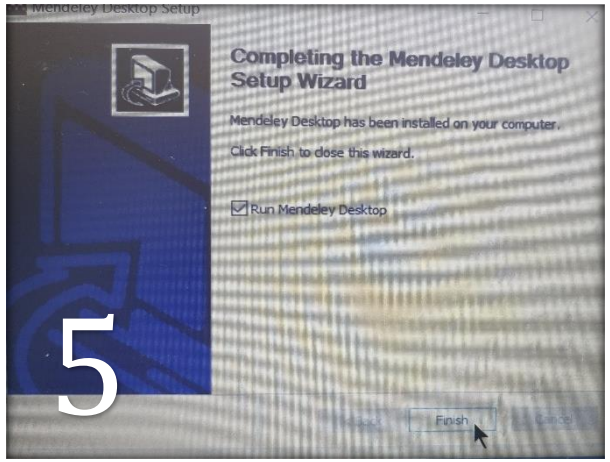
Εγκατάσταση του προγράμματος











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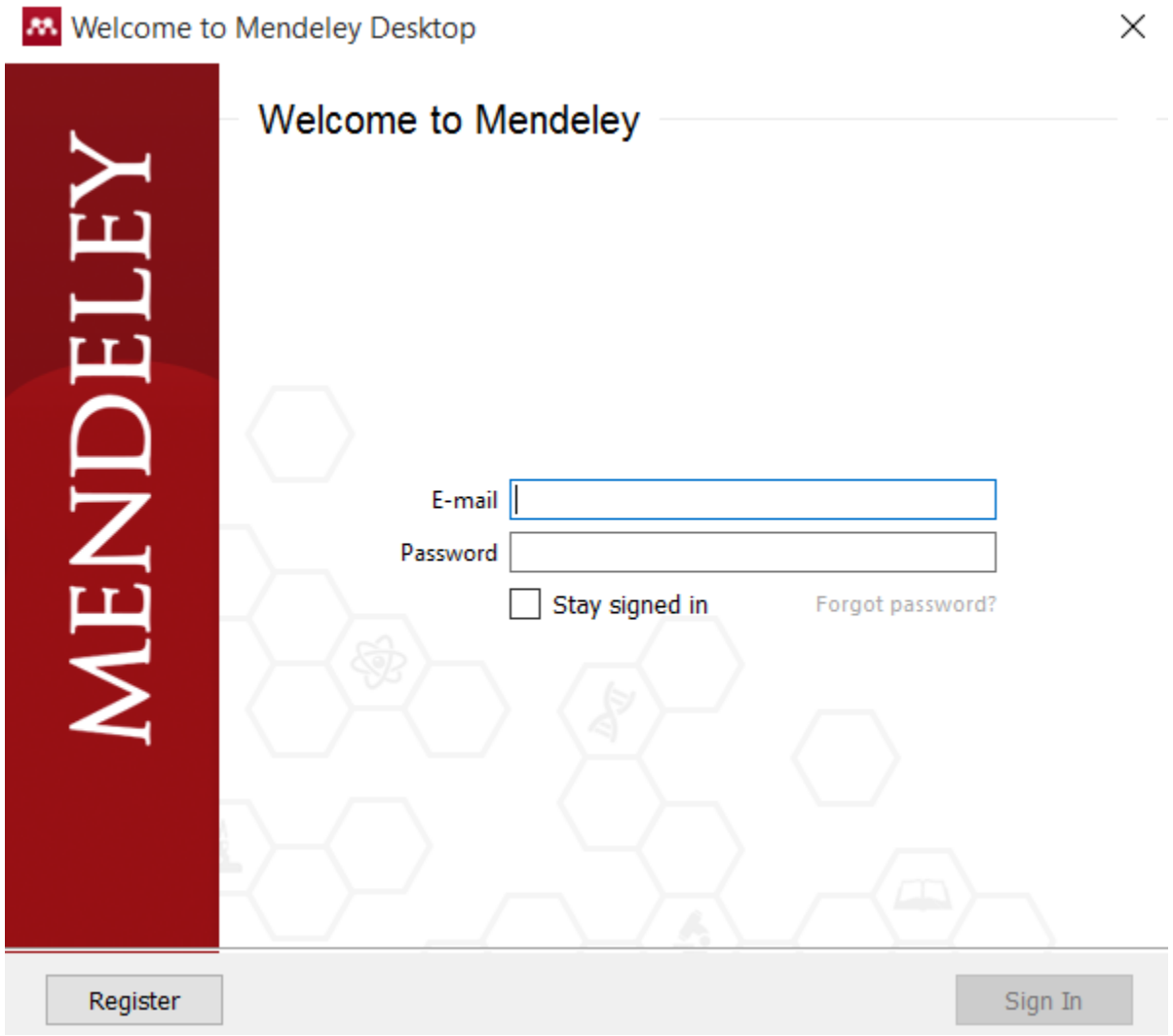
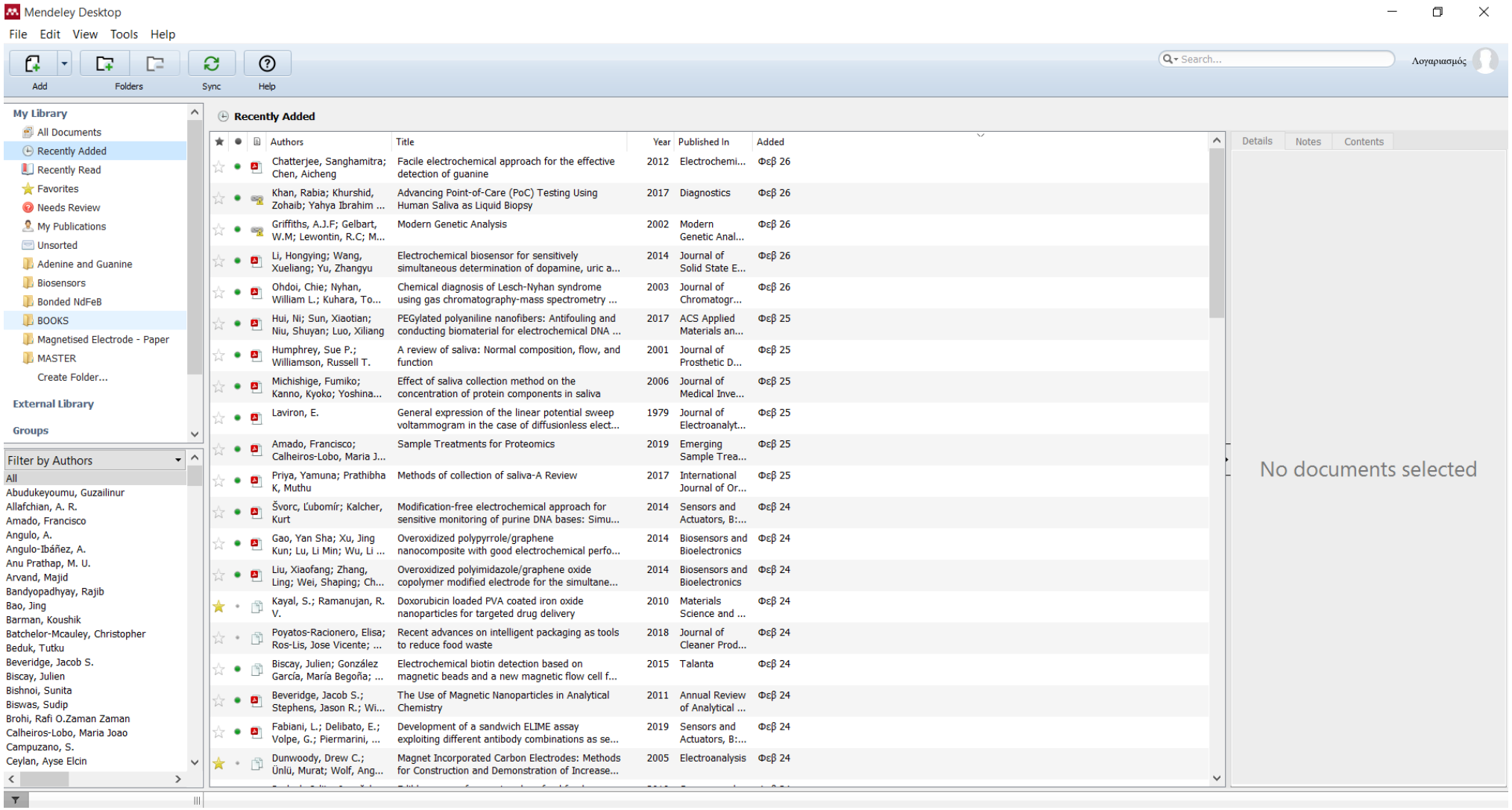
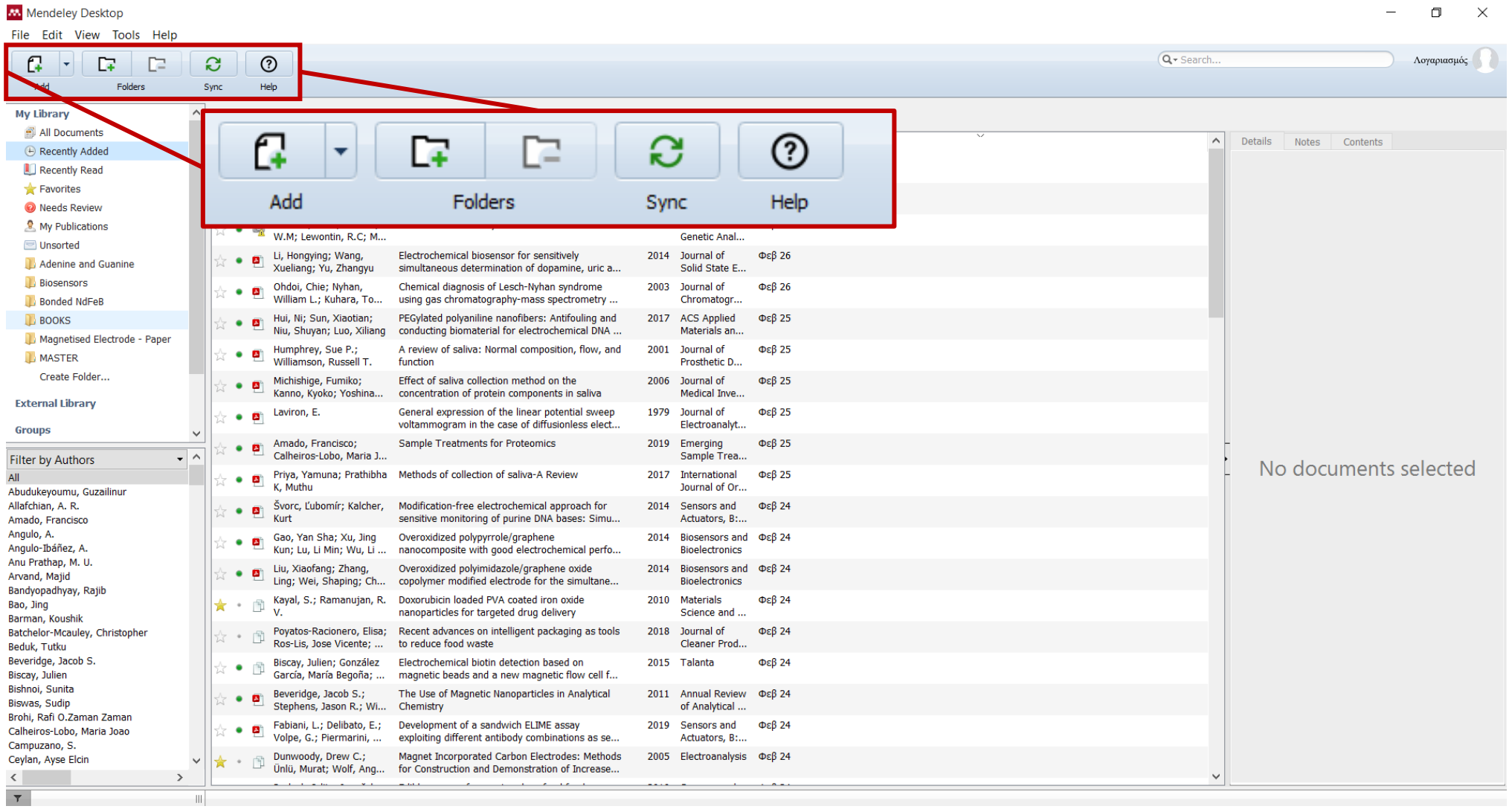


Επιτρέπεται σύνδεση και χρήση τόσο από την ιστοσελίδα όσο και από το πρόγραμμα Mendeley Desktop

Περιβάλλον του προγράμματος



Προσθήκη Αρχείων



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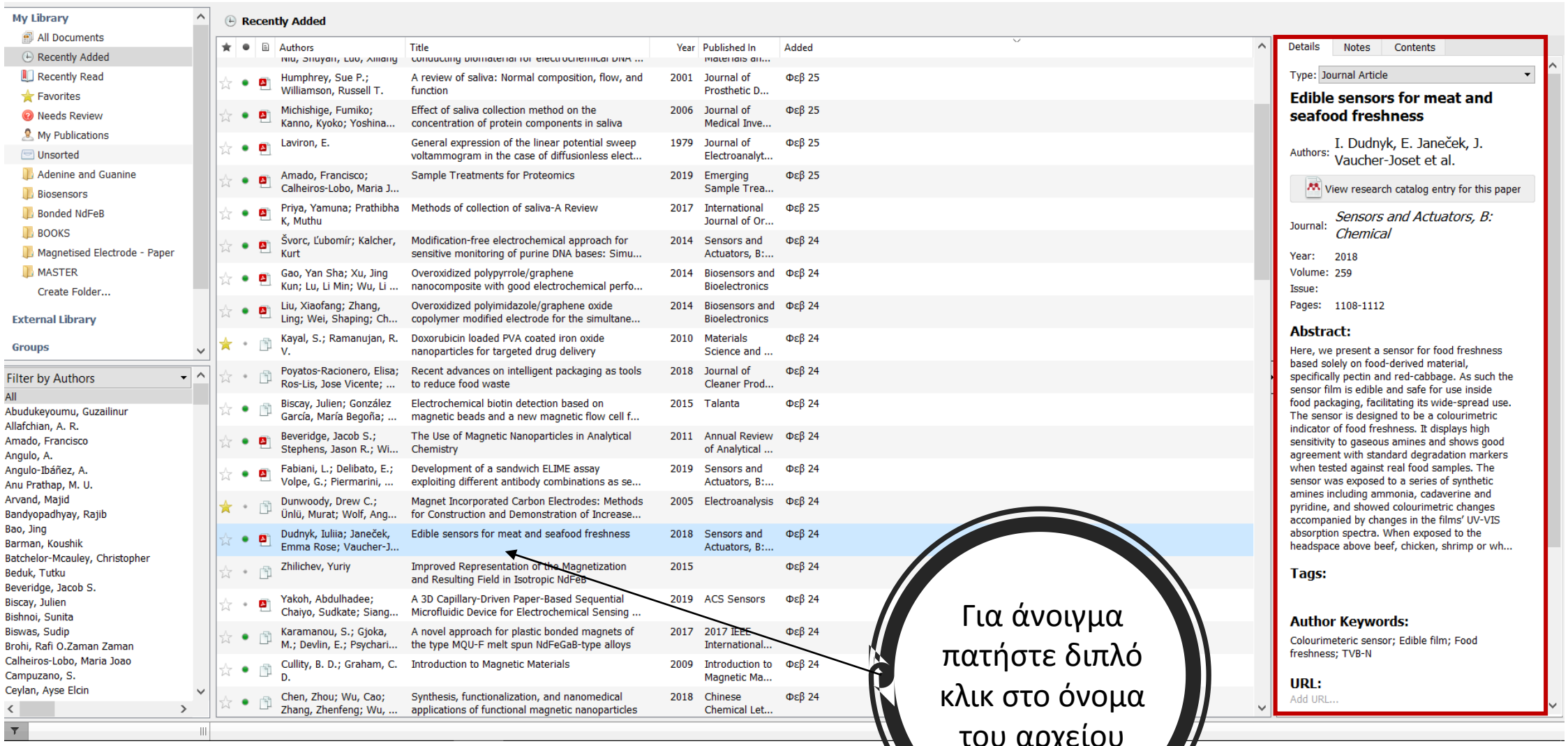

Ανάγνωση αρχείων

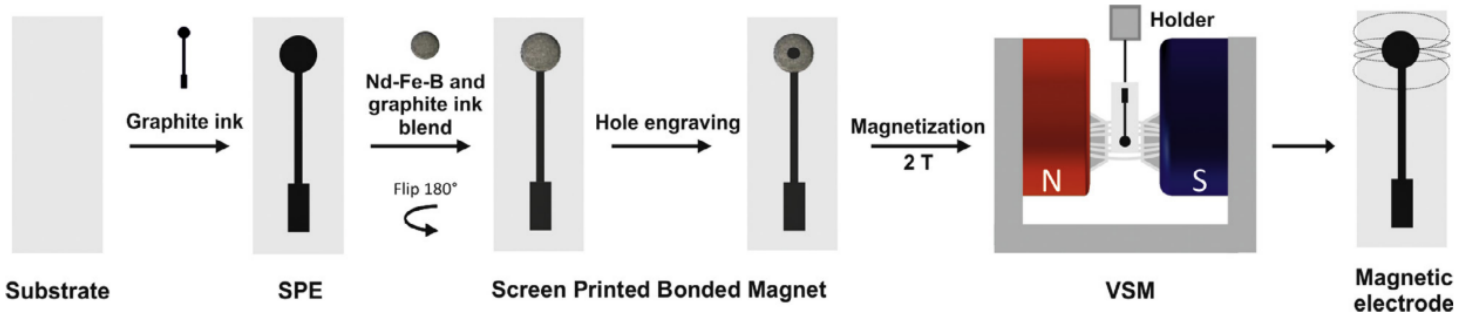

Fig. 1. Fabrication and magnetization of integrated screen-printed magnetic electrodes.

either hard magnetic materials (alnicos, hard ferrites, samarium-cobalt or neodymium-iron-boron alloys) or soft magnetic materials (iron-silicon, nickel-iron alloys, soft ferrites) which used to make permanent magnets or electromagnets, respectively [29,30].

Herein, we introduce for the first time the development of all screen-printed magnetic sensors (magnet-SPEs) integrating graphite electrodes and permanent bonded magnets at the two sides of a thin polyester films, as compact, cheap and disposable alternatives to conventional magnetic electrode shafts, magnetic supports or external electromagnets in various electrochemical magneto assays (Fig. 1). Magnet-SPEs offer a compact design and they can be massively fabricated at an extremely low cost and at a highly reproducible manner. As a result, magnet-SPEs hold promise for the development of smart sensors for chemical anal-

Spectrum Two instrument (Perkin Elmer). Photos were taken using an S8 APO stereoscope (Leica). The thickness of the printings was measured with a thickness probe coupled with a Tesatronic TT10 unit (TESA).

2.3. Fabrication of all screen-printed magnetic sensors

NdFeB powder and thixotropic carbon ink (Electrodag PF-407A) were mixed at different proportions, 60/40, 70/30 and 80/20 (wt.%) and homogenized (750 rpm for 2 min) with a planetary centrifugal de-foaming mixer (Uni-Cyclone). The desired rheological properties were obtained by adding (1–methoxy–2–propyl)acetate (Sigma-Aldrich) in the mixed paste followed by an extra homogenization step at 500 rpm for 1 min. The fabrication process is il-

Details Notes Contents
Type: Journal Article
All-screen-printed graphite sensors integrating permanent bonded magnets. Fabrication, characterization and analytical utility
Authors: A. Papavasileiou, I. Panagiotopoulos, M. Prodr...
View research catalog entry for this paper
Journal: *Electrochimica Acta*
Year: 2020
Volume: 360
Issue:
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Abstract:
© 2020 Elsevier Ltd Electrochemical magneto assays have been extremely popular thanks to the facile manipulation of magnetic nanoparticles (MNPs) by a magnetic field. To this end, various related accessories, such as magnetic electrode shafts, electrochemical cells integrating (electro)magnets, magnetic stickers etc. have been developed aiming to attract MNPs on the electrode surface. Herein, we introduce for the first time screen-printed electrodes (SPEs) coupled with screen-printed permanent bonded magnets as a compact, portable, cheap and disposable alternative to aforementioned products. The bonded magnet (3 mm ⌀, 56 ± 6 μm thick) consists of micro sized NdFeB particles dispersed in a thixotrop...

Tags:
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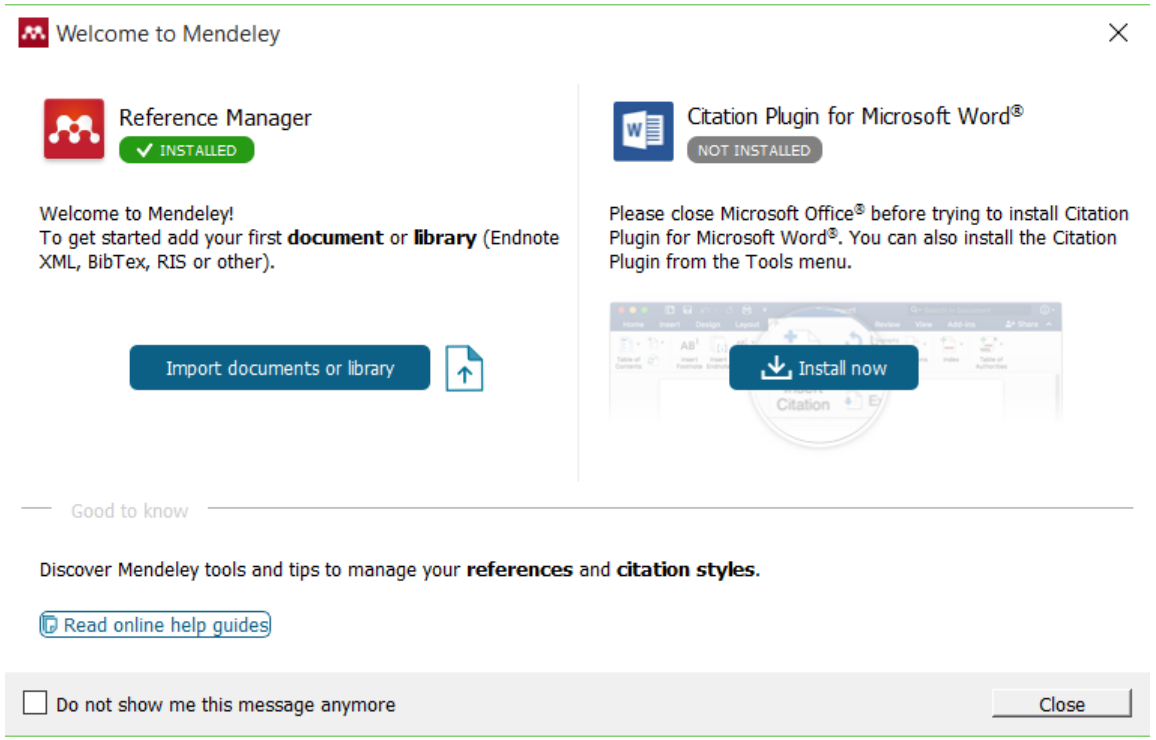

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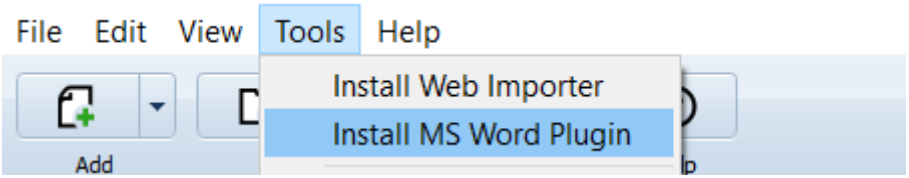

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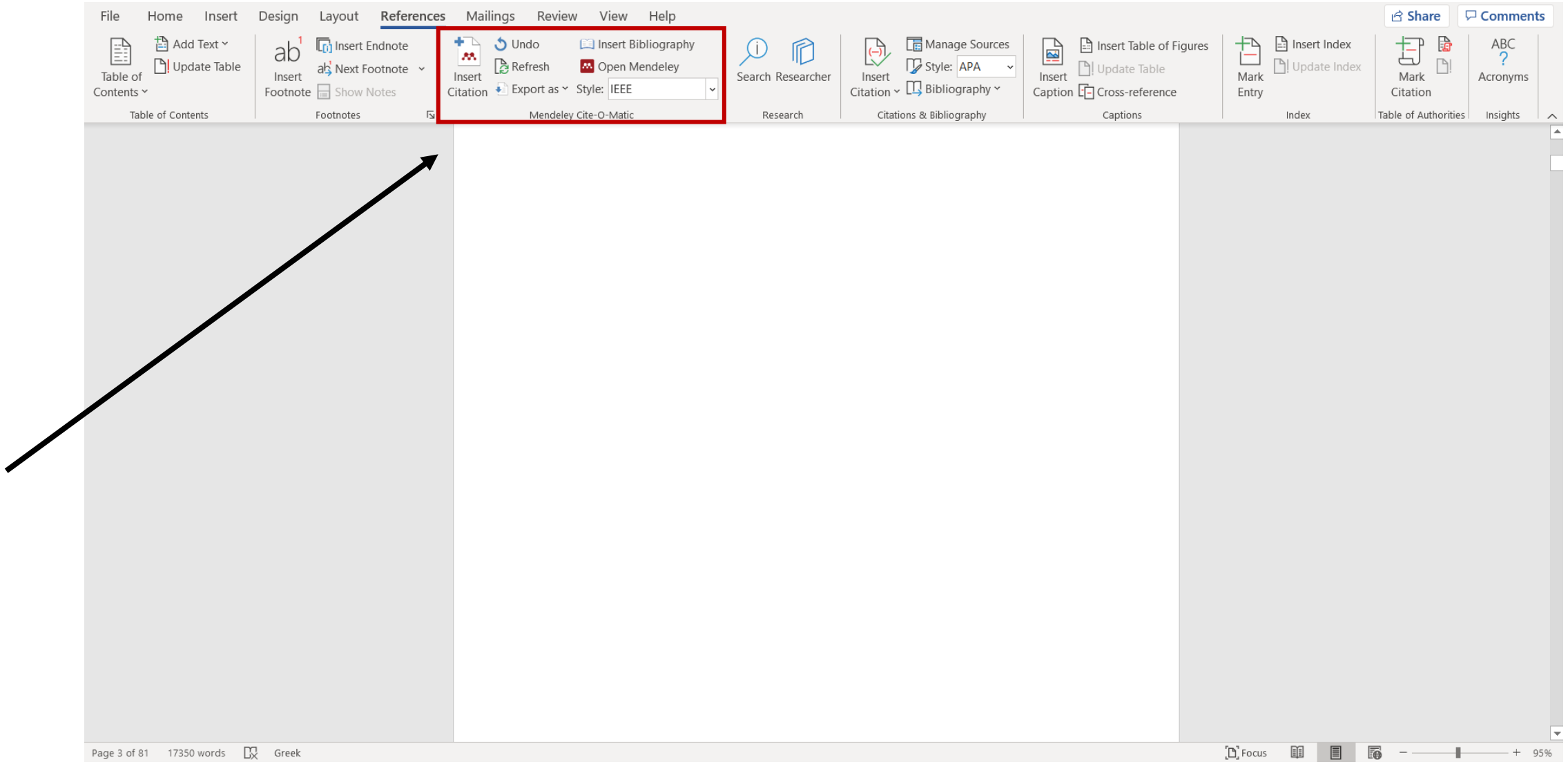
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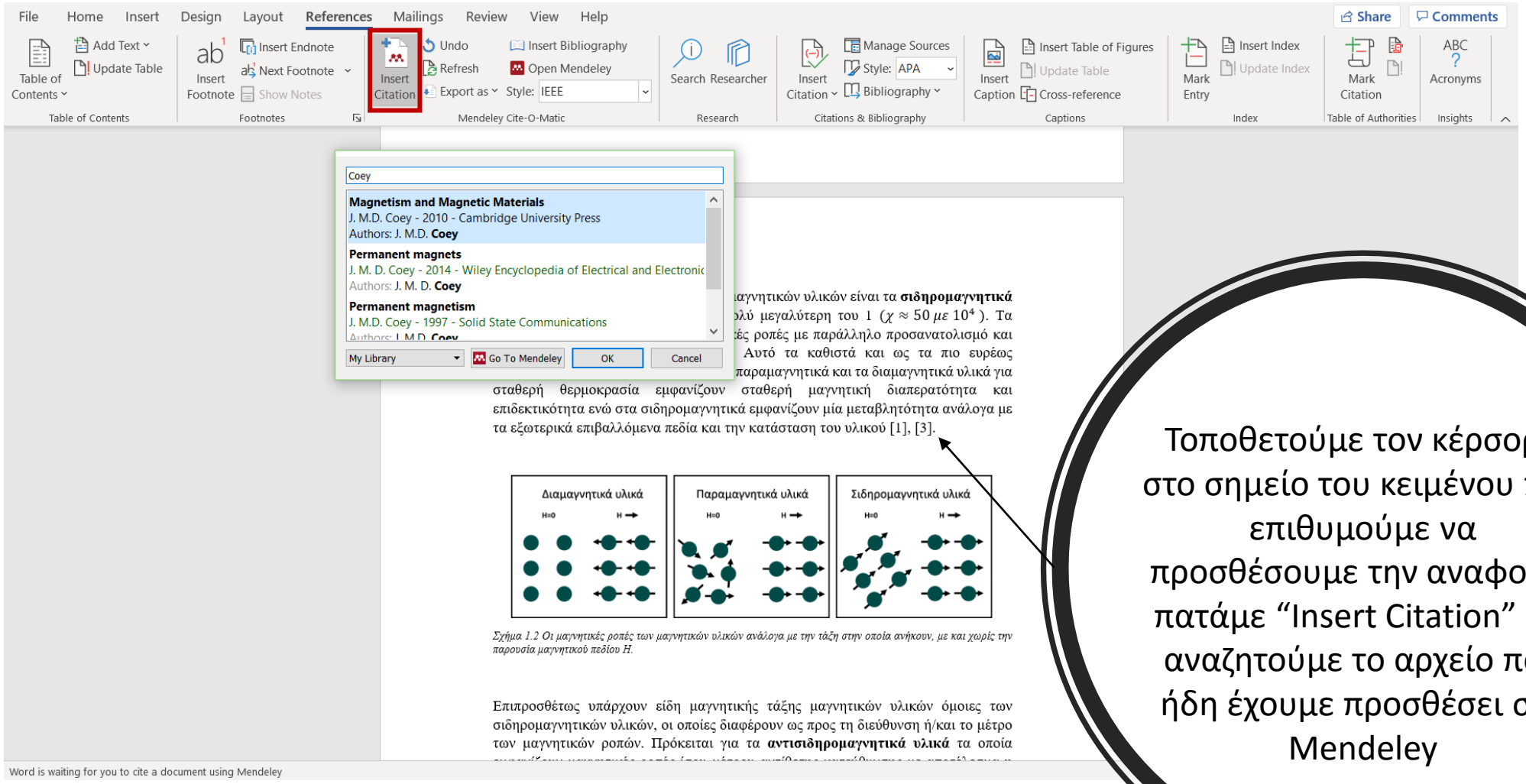

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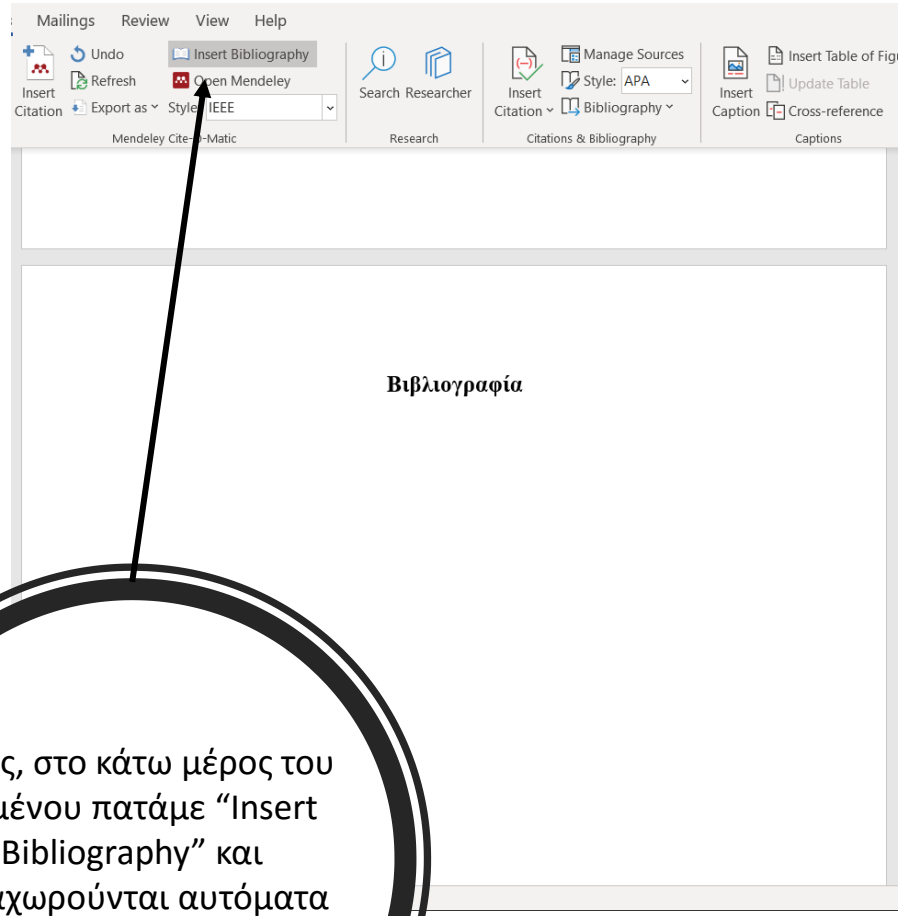

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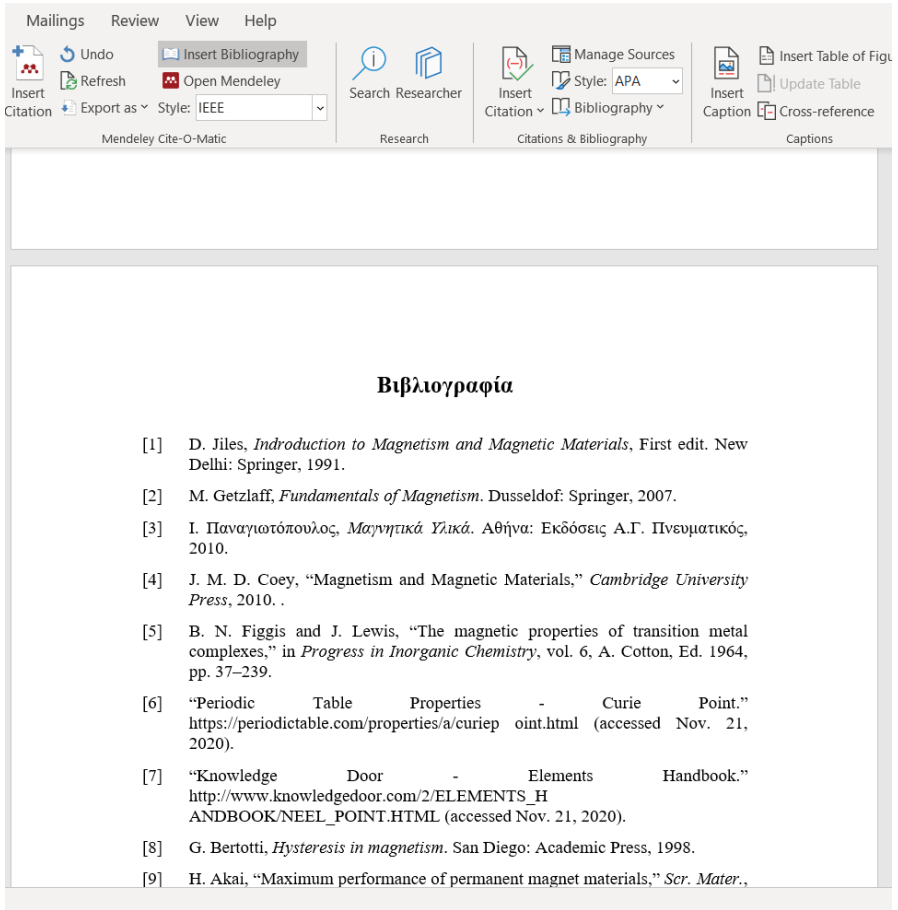

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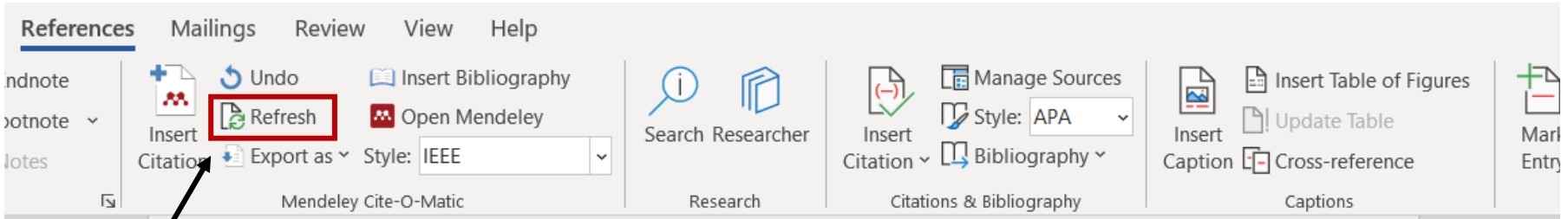

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Βιβλιογραφία

[1] D. Jiles, *Indroduction to Magnetism and Magnetic Materials*, First edit. Delhi: Springer, 1991.

[2] M. Getzlaff, *Fundamentals of Magnetism*. Dusseldof: Springer, 2007.

[3] Ι. Παναγιωτόπουλος, *Μαγνητικά Υλικά*. Αθήνα: Εκδόσεις Α.Γ. Πνευμα 2010.

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[5] B. N. Figgis and J. Lewis, “The magnetic properties of transition complexes,” in *Progress in Inorganic Chemistry*, vol. 6, A. Cotton, Ed. pp. 37–239.

[6] “Periodic Table Properties - Curie

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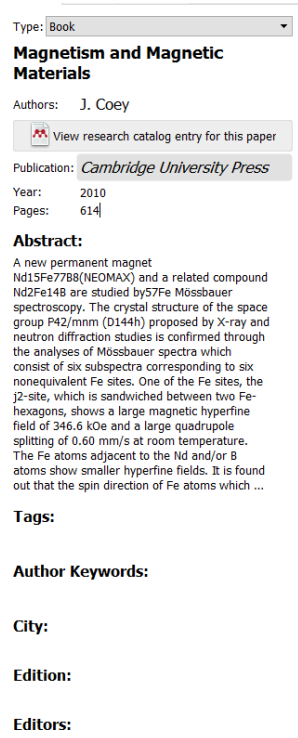

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