Errata for PhD Dissertation

Adrian Stoica. *Preparation of nanostructured carbon films by Plasma Enhanced Chemical Vapor Deposition.* Masaryk University, Brno, Czech Republic.

The following list of errors was prepared based on the reviews received on my dissertation work. After submitting my dissertation I prepared this list of corrections on the basis of reviewers' suggestions. I would like to thank the reviewers and also my supervisor for pointing out the errors and suggesting the necessary corrections. Errors regarding the accuracy of surface roughness measurements were pointed out. The accuracy of the values was overestimated and the experimental errors were missing. The results were reevaluated according to the reviewers' suggestions and the corrected values are presented below. Also I need to correct here some mistakes in reference numbering and omission of citations. I will try to address them all in this errata. I chose to list them ordered by the page number where they were found.

Page 24: Added reference number [79]. The title of Table 2.4 should now be read: Overview of properties and applications of DLC films [79].

Page 26: Added reference number [253]. The title of Table 2.5 should now be read: Influence of the doping elements on DLC coatings properties [253].

Page 32: Added reference number [140]. The title of Figure 3.1 should now be read: Schematic of a parallel plate deposition system for DLC [140].

Page 33: Added reference number [254]. The title of Figure 3.2 should now be read: Scheme of a cathode rays tube, showing the different gas discharge regions [254].

Page 37 – Last line: Reference number [141] should be replaced by reference number [254]. The title of Figure 3.4 should now be read: Plasma generated in a capacitive configuration. The electric field associated to the sheaths promotes ion bombardment onto the electrodes [254].

Page 44 – Line 11: The equivalent in Pa of 0.5 mTorr should be added, which is 0.066 Pa.

Page 49: Added reference number [255]. The title of Figure 3.11 should now be read: Schematics of TVA and G-TVA deposition methods. Adapted from [255].

Page 57: Added reference number [256]. The title of Figure 3.17 should now be read: Schematic comparison of a conventional polymer, a plasma polymer and a precursor monomer [256].

Page 58, last paragraph: Added reference number [257]. Second sentence in the paragraph should be read "PECVD SiO_x coatings are often substoichiometric, i.e. they exhibit a considerable carbon and hydrogen content, depending mainly on the process gas mixture and the applied power [257]".

Page 59: Added reference number [257]. The title of Figure 3.20 should be read: "Deposition mechanism of gas phase and surface reactions for SiO_x films from O_2+HMDSO mixtures. Adapted from [194-197], as reviewed by Körner [257].

Page 60 – Line 8: Text added before the sentence "Depending on the feed gas composition...". It should be read: "In his work [257], Körner presents a concise overview about silicon oxide deposition mechanism. Depending on the feed gas composition...". Last sentence in the paragraph instead of "Depending on the process conditions, a third pathway leading to the formation of powder has to be mentioned." should be read "Depending on the process conditions, a third pathway leading to the formation of powder had to be mentioned [257].

Page 127: The roughness values presented in Table 7.3 should be replaced by the values in the table below:

Table 7.3. Roughness of selected samples.

Sample	DN4	DN6_b	DN6_c	DN11_a	DN11_b
R_a	46 ± 1 nm	96 ± 4 nm	69 ± 3 nm	80 ± 10 nm	81 ± 4 nm
R_q	60 ± 3 nm	119 ± 5 nm	91 ± 3 nm	150 ± 50 nm	111 ± 5 nm

Page 144 – Line 5: The roughness values presented in the sentence "Arithmetic average, R_a, and root mean squared, R_q, values of the BMC surface roughness were determined R_a = 12.65 nm and R_q = 19.39 nm" should be replaced by R_a = 12 ± 2 nm and R_q = 19 ± 4 nm.

Page 144 – Line 6: The values presented in the sentence "In the case of PPS substrate the surface roughness values were R_a = 46.25 nm and R_q = 63.22 nm." should be replaced by the following values of roughness R_a = 42 ± 20 nm and R_q = 55 ± 20 nm.

Page 155: Last sentence before last paragraph instead of: "Optical parameters of the substrate are suitable..." should be read: "The properties of the substrate make it suitable...".

Page 159 – second paragraph. The values of roughness in the sentence "The values of surface roughness for sample LD17 were R_a = 3.74 nm and R_q = 10.33 nm"

should be read “The values of surface roughness for sample LD17 were R_a = 4 ± 1 nm and R_q = 9 ± 5 nm”.

In the same paragraph, the sentence “The roughness of the films deposited from this gas mixture were R_a = 3.82 nm and R_q = 6.07 nm.” should be “The roughness of the films deposited from this gas mixture were R_a = 3 ± 2 nm and R_q = 5 ± 3 nm”.

Page 179 – third paragraph. The sentence “The values of the surface roughness (R_a) on the unmodified polymer substrates were reduced after coating by two orders of magnitude from 46.25 nm for PPS and 12.65 nm for BMC down to 0.13 – 0.17 nm” should be instead: “The values of the surface roughness (R_a) on the unmodified polymer substrates were reduced after coating by two orders of magnitude from at least 40 nm for PPS and 10 nm for BMC down to less than 4 nm”.

Page 194: Added the omitted citations:

[253] C. Chouquet. *Élaboration et caractérisation de revêtements type “diamond-like carbon” déposés par un procédé chimique en phase vapeur assisté par un plasma basse fréquence.* PhD dissertation. L’Institut National Polytechnique de Lorraine, Université Nancy (2008);

[254] C. Corbella Roca. *Thin film structures of diamond-like carbon prepared by pulsed plasma techniques.* PhD dissertation. Universitat de Barcelona (2005);

[255] A. Stoica. *Obţinerea structurilor de tip Diamond-Like Carbon (DLC) prin metoda Arcului Termoionic în Vid în flux de Gaz (G-TVA).* Master's thesis. Ovidius University Constanţa (2007);

[256] http://www.eurobonding.org/Englisch/Oberflaechen/Plasma_ polymerization.htm;

[257] L. Körner. *Diffusion Barrier Coatings for Polymer Containers processed by Plasma Enhanced Chemical Vapor Deposition*. PhD dissertation. Eidgenössische Technische Hochschule – ETH Zürich (2010).

I regret that these errors gained entrance in my work and I am grateful to the reviewers and also to my supervisor for their valuable comments. I hope that this list of corrections to my dissertation may be useful for anyone using it as resource.

Adrian Stoica Brno 12.2.2013