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**ENGN6250 /​ COMP6250 |** Professional Practice 1

Week 5 **Tutorial**

Knowing your audience

**1.** Analyse the two texts below and explain who the audience is for each text

**Text 1**

Although the basic interaction between an electromagnetic field and a nanomaterial was understood using the Mie theory several decades ago, light or radiation interaction with nanomaterials has attracted considerable interest in recent years (Sardar et al., 2009). Various nanoparticles (NPs) have been developed for application in the fields of imaging, heat generation (Richardson et al., 2009; Das and Soni, 2016), surface-enhanced sensing (Haes et al., 2005), and especially, light harvesting in solar cells. Among them, the presence of noble metallic (Au, Ag, Cu, and Al) NPs provides an efficient medium to improve solar cell performance due to the efficient excitation of localized surface plasmon resonance (LSPR) oscillation with the light source (Wang et al.,2014; Li et al., 2016), which can be simply seen as a photon greatly captured to the surface of the small NP through the free electrons in the

NP when the frequency of the photon is near or equal to the oscillation frequency of the electrons around the surface of the NP, leading to an intense electric field around the NP surface. The LSPR occurs and decays by two ways: one is radiation by radiating its energy, resulting in light scattering, the other is a non-radiative way as a result of photothermal conversion process (Jain et al., 2008). Moreover, the scattering and absorption properties of these noble metal NPs can be enhanced strongly at the resonant frequency due to the LSPR, which lies in the visible and near-infrared regions for Au, Ag, and Cu (Eustis and El-Sayed, 2006).

*Source: Chen, M., He, Y., Wang, X., Hu, Y. (2018). Numerically investigating the optical properties of plasmonic metallic nanoparticles for effective solar absorption and heating, Solar Energy, 161, 17-24. Doi. 10.1016/j.solener.2017.12.032.*

**Text 2**

A set of newly discovered vulnerabilities in computers have put most devices made in the last two decades at risk and will “haunt us for quite some time”.

Users have been advised to update all devices are soon as possible to protect from the flaw, which leaves stored passwords, photos and messages at risk.

The vulnerabilities can be found in nearly all computer devices made in the last 20 years, including desktop computers, smartphones and laptops.

The flaw has existed for nearly two decades but has only recently been exposed, and it’s not yet known if it has been exploited by malicious parties.

Dr Yuval Yarom, from the University of Adelaide’s School of Computer Science and Data61, was part of the international team that discovered the security flaw and said it puts computers, smartphones and items stored on the cloud at risk.

Apple has confirmed that all of its devices running iOS and macOS were impacted by the vulnerabilities.

The Meltdown flaw is relatively simple to fix, and tech giants including Apple, Amazon, Android, Google and Microsoft have already deployed patches for most of their devices. Users are recommended to install these updates as soon as possible.

“The security of the systems our customers depend upon and enjoy is a top priority for us.”

Intel CEO Brian Krzanich addressed the issue during his keynote address at the CES tech conference this week, saying that updates will be issued for 90 per cent of its products within a week.

*Adapted from Sadler, D. (2018). Why your passwords, photos and texts are at risk. Newly discovered bugs in PC and phone processors. ACS Information Age. Retrieved from* [*https://ia.acs.org.au/article/2018/why-your-passwords--photos-and-texts-are-at-risk.html?ref=newsletter*](https://ia.acs.org.au/article/2018/why-your-passwords--photos-and-texts-are-at-risk.html?ref=newsletter)*.*

**2.** Note the textual features for each text and use examples to show how these address different audience needs

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| **Text Feature** | **Text 1 Example**  **Target audience:** | **Text 2 Example**  **Target audience:** |
| Language | *Numerically investigating the optical properties …* (Chen, et al, 2018) | Why your passwords, photos and texts are at risk. Sadler (2018) |
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